AMIGA-PC CROSS-PLATFORM SURVIVAL KIT—P.14

AMIGA WORLD

July 1994
U.S.A. $3.95
Canada $4.95
UK £2.95

DO FOLD, SPINDLE OR OTHERWISE MANIPULATE YOUR GRAPHICS!

IMAGE PROCESSING!

3 TOP PROGRAMS GO "HEAD-2-HEAD"



PLUS!

- PRESENTATION TIPS FOR SCALA MM300
- PRACTICAL AREXX
- "NON-LINEAR" VIDEO
- AMIGA USER GROUPS
- GRAPHICS FOR SCIENCE

WITH REVIEWS, GAMES, MORE!

An IDG Communications Publication


THE WRITE WAY HAS TWO DIRECTIONS.
Final Writer
Word Processor for the Amiga
Final Copy™ II
Word Processor for the Amiga
LOW PRICE
ROTATING GRAPHICS
100 EPS IMAGES
120 OUTLINE FONTS
WORKBENCH 1.3 COMPATIBLE
30 OUTLINE FONTS
Final Writer Release 2
"...Final Writer is arguably the best word processor yet released for the Amiga.", Amiga World, March 1994. "...Final Writer is the top Amiga word processor to rival even the Mac and PC heavyweights.", CU Amiga (England), January 1994. Final Writer has all of Final Copy II's major features plus many more. It includes: Table of Contents, Table of Illustrations, Endnotes, Bibliography, and Index generation; sections; multiple master pages; EPS graphic support; movable text blocks; rotated text and graphics; and a user configured button strip for individual customization of the program's interface. Release 2 now includes complete "Undo" capabilities, easy-to-select Bold, Italic, and Underline options; floating palettes for tools, user buttons, and style sheets; a new tool strip that features drop down menus for fonts, styles, and font size; and additional flexibility in customization of the user interface. Final Writer requires 2 megabytes of RAM, a hard drive, and Workbench 2.0 or higher.
Final Copy II Release 2
"Readers' Choice Award 1993", Amazing Computing; "Award '93 - Best Software Product", Amiga Plus (Germany), "Product of the Year 1993", Amiga Magazin (Germany). What more can we say? This is the most popular and most used word processor on the Amiga today. It features a 110,000 word speller; 1.4 million word thesaurus; auto hyphenation; search and replace; tab stops; adjustable margins; word and sentence counts; paragraph sorting; on-screen math; ARexx port; style sheets; drawing tools; imported IFF graphics; master pages; Compugraphic, Type-1; and NimbusQ outline font support; and the best printing possible on any Workbench supported graphic printer or PostScript® device. Final Copy II works equally well on Workbench 1.3, 2.0 and higher. All you need is a minimum of 1 megabyte of RAM and 2 floppy drives. A new low price now makes this top-rated word processor an even better bargain than ever.
SoftWood, Inc.
P.O. Box 50178
Phoenix, Arizona 85076
1(800)247-8314
PostScript is a registered trademark of Adobe Systems Incorporated.
Circle 48 on Reader Service card.

ULTIMATE GAME PERFORMANCE



AMIGA SMART PORT Plus™

Game Port Interface System

...is the ONLY analog/digital, auto-switching system for the Amiga. Three ports available for mouse, digital joystick and a fully compatible DUAL analog PC style joystick. No more plugging or unplugging cables to switch from mouse to joystick mode! Simply press the button on the device to be used and the automatic electronic switching does the rest.

FEATURES

- An IBM PC compatible Game Port, containing TWO analog joystick adapters.
- Compatible with ANY PC style joystick and pedals including Flightstick Pro and Thrustmaster FCS.
- Automatic electronic switching between digital and analog modes.
- Smooth and continuous adjustment capability using internal solid state circuitry to tune the analog settings.
- Support for analog rudder pedal (IDD's PC Pedals), analog throttle, and IDD's PC Stick Shift for simulator games.
- Provides protection for the mother board with solid state current limiting circuitry.
- FREE SmartPortCal utility program to adjust the analog settings.
- FREE analog upgrades for several games.
- FREE keyboard reference cards for quick review of keyboard functions.
- Mounts out of sight, but within reach, with Velcro® patches.

FREE!

Analog Game Upgrade Disk with your purchase of the Amiga Smart Port Plus™

- Adds exciting new features including analog rudder pedals, analog throttle and support for extra buttons to your favorite games.
- Enhances playability and realism.
- Corrects or improves games' control while in memory.
- Will not alter original game disks.
- Upgrades for FA/18 Interceptor, Knights of the Sky, F-15 Strike Eagle II, Gunship 2000 and many more.
- Also includes - SmartPortCal Utility Program.
- Download latest upgrades from IDD's BBS, FREE!



PC PEDALS™

Airplane/Car Pedals & Switching Center

...Provides realistic auto clutch/brake/accelerator and plane rudder pedals. PC Pedals can be used with many types of games including flight simulators, car simulators, action/adventure games and many more! No more plugging and unplugging peripheral devices, the PC Pedal's internal, solid state switching center automatically activates the desired devices.



PC Pedals Expansion Module
Sold Separately

FEATURES

- Stylish steel enclosure.
- Durable steel pedals with separate long life cycle sensors.
- Four game device input ports for joystick 1, joystick 2/throttle, IDD's PC Stick Shift and IDD's PC Steering Wheel.
- Coupling/decoupling system to mechanically switch between car and airplane mode.
- Solid state, 8-way switching system with LED mode indicators.
- Expansion port for use with 3 additional modes.
- Resume mode - remembers mode last used for easy resumption of play.
- Three separate analog pedals.
- No "pinch points" for increased safety.
- Full range sensor travel for exceptional electrical resolution.
- Compatible with the Commodore Amiga computer when used with the IDD Amiga Smart Port Plus™.

Circle 68 on Reader Service card.

COMING SOON!

PC STICK SHIFT™ adds a realistic stick shift for use on automobile computer games and simulators. Works with PC PEDALS™.

EXPANSION MODULES allow connection of new peripheral products through your PC PEDALS™ automatic switching system. (See photo above).

IDD

Dealer Inquiries Welcome

For more information or to order these and other exciting products, contact:
InterACTIVE Digital Devices, Inc., 6730 West Chicago Street, Suite 5, Chandler, AZ 85226
Phone: (602) 940-0340 • BBS/FAX: (602) 940-0031

VISA — MasterCard

*InterACTIVE Digital Devices, Inc., is a diversified company developing, manufacturing and distributing computer and consumer products. All trademarks and tradenames herein are the properties of their respective owners.

FIRST *IMPRESSIONS*

Ahab, the White Whale, and the Orphan Fish

Call me Ishmael—or whatever the hell you want. But let's make the first part quick. I'm your new editor and the assignment could've been more pleasant. I've worked on *AW* since '86, and I was around a few computer-magazine blocks before that, too.

Hunting the Whale . . . Off the Bahamas?

Okay, let's get to it. We've got vermin in the boot blocks here in the Amiga community, and you can spell the name of the virus as "Commodore." As most of you know already, Captain Gould has abandoned ship—or at least part of the ship. (His strategy for defeating the great White Whale of debt he's in remains inscrutable right now.)

So, what this modern-day Captain Ahab and his top ship's officers are up to at the moment was unknown at this writing, but he did make most of his engineering staff (the only ones who ever really gave a damn about the Amiga) walk the plank just before heading to the lifeboat himself.

Up to this point, the story has been reported in several different ways. (The facts as we know them are given in the box in "Overscan," p. 4.)

I don't know the exact terms of the liquidation settlement as I write this. The implications, however, may not require a whole lot of speculation. What readers are most concerned about is, Will my system become an orphan with nobody developing products for it? From everything we've been able to gather from talking with many Amiga developers, the answer is a resounding NO!

You Can't Steal What You Don't *Really* Own

If all or parts of Commodore's operations go into liquidation, it is extremely likely either that someone else can then acquire the company, or that the Amiga technology will be licensed to interested third parties. Either way, there will still be Amigas being sold out there, and people developing new products for them. And, believe me, no one is more interested in continuing the Amiga line than the development community.

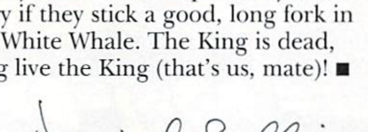
As one developer said to us, "This is the best thing that's happened to the Amiga, because—guess what—somebody's going to pick up the technology and run with it."

And Mike Levin, a leading spokesperson for the Commodore Shareholders' Movement (the good guys who've been trying to rock the yacht for a couple of years now), says there's a lot of interest from true-blue, hardcore developers. Here's part of what Mike had to say to us: "Whoever gets the Amiga technology, we must all call for them to license it to other interested parties for manufacture. Imagine a custom Amiga from NewTek, Scala, GVP, Digital Creations, RGB, and Utilities Unlimited. Amiga developers could finally own their own destinies. From Commodore's ashes, a new and vital alternative computer market could rise."

And hat's off to Blue Ribbon SoundWorks, which fired off a letter to its entire customer base to tell them, categorically, the company intends to support them no matter what happens to Commodore. In addition, Blue Ribbon president Melissa Jordan Grey said: "[Events at Commodore] do not in any way diminish the outstanding technology which has evolved since the Amiga's inception. In fact, Commodore's demise may actually spur additional growth of the Amiga . . . "

And that's only a brief sampling of the dozens of things we've heard from developers—not to mention the hundreds of supportive calls we received from readers.

So, we'll keep you informed about what goes down at Commodore subsequently—but, more importantly, don't worry if they stick a good, long fork in that White Whale. The King is dead, Long live the King (that's us, mate)! ■



Editor-in-Chief

AmigaWorld

Dale Strang, *Publisher*

Daniel Sullivan, *Editor-in-Chief*

Barbara Gefvert, *Senior Editor*

Tim Walsh, *Senior Editor/Reviews*

Ann Record, *Assistant Editor*

Peter Olafson, *Games Editor*

Denny Atkin, Paulo de Andrade, Joel Hagen, *Contributing Editors*

Howard G. Happ, *Art Director*

Laura Johnson, *Assistant Art Director*

Ann Dillon, *Designer*

Alana Korda, *Manufacturing Manager*

Michael McGoldrick, *Advertising Director*

Barbara Hoy, *Sales Representative*

Heather Guinard, *Sales Representative*

Meredith Bickford, *Advertising Coordinator*

Advertising: *1-800-441-4403; 1-603-924-0100*

FAX: 1-603-924-4066

Giorgio Saluti, *Associate Publisher, West Coast Sales*

600 Townsend St., Suite 170 East

San Francisco, CA 94103

1-415-522-2403; FAX: 1-415-522-2409

Wendie Haines Marro, *Marketing Director*

Mary McCole, *Promotion Coordinator*

Lisa Jaillet, *Desktop Publishing Manager*

Johanna Rivard, *Circulation Promotion Manager*

Debbie Bourgault, *Circulation Fulfillment Manager*

Subscription Services: 1-800-827-0877 or 1-815-734-1109

TechMedia Publishing

Dale Strang, *President*

Darlene Sweeney, *Administrative Assistant*

Karen Peterson, *Business Manager*

Nancy Mallette, *Senior Credit Analyst*

Kemco Publishers Services, *Newsstand Circulation*

AmigaWorld (ISSN 0883-2390) is an independent journal not connected with Commodore Business Machines, Inc. *AmigaWorld* is published monthly by TechMedia Publishing, Inc., an IDG Company, 80 Elm St., Peterborough, NH 03458. US subscription rate is $29.97, one year; $57.97, two years; $83.97, three years; Canada, $41.97 (includes GST), and Mexico $38.97. Foreign Surface $49.97. Foreign Airmail $84.97. US funds drawn on US bank. Prepayment is required on all foreign subscriptions. All foreign rates are one-year only. Second-class postage paid at Peterborough, NH, and at additional mailing offices. Phone: 603-924-0100. On-line on BIX: Amiga.World (in Amiga.exchange); CompuServe: 76376,2137; Portal: Go AmigaWorld.

Entire contents copyright 1994 by TechMedia Publishing, Inc. No part of this public-ation may be printed or otherwise reproduced without written permission from the publisher.

Postmaster: Send address changes to *AmigaWorld*, Subscription Services, PO Box 595, Mt. Morris, IL 61054-7901. Nationally distributed by Kable News Co. *AmigaWorld* makes every effort to ensure the accuracy of articles, listings, and diagrams published in the magazine. *AmigaWorld* assumes no responsibility for damages due to errors or omissions. PRINTED IN THE USA. Posted under Canadian International Publication agreement # 0257478.

CONTENTS

VOLUME 10, NUMBER 7, JULY 1994



They say he liked his tomato soup ***exactly*** *the way Campbell's intended it (who's behind door upper-left on the cover?), but we know surviving Amiga artists and graphics buffs like to play fast and loose with almost everything. Find out which of the three "great manipulators" provides the flavors you prefer—p. 19.*

COVER PHOTOGRAPH BY EDWARD JUDICE
SPECIAL EFFECTS BY LAURA JOHNSON

OVERSCAN

News, New Products and Networks

Vendors Pledge Support for Amiga . . . With or Without Commodore

In the aftermath of the recent announcement by Commodore to liquidate at least part of its operations (see box, right), developers and distributors of Amiga products rallied to affirm their support for the Amiga market.

Major distributors, including Creative Computers, Micro-Pace, and Creative Equipment, all confirmed they are ready, willing, and able to supply Amiga users with Amiga products. Also, via an unofficial polling of third-party producers of hardware and software, *AmigaWorld* found widespread commitment to continued development of Amiga products.

All parties seemed buoyed by the likely prospect that the resolution of liquidation proceedings would, at the very least, result in the licensing of Amiga technology to interested third parties—of which, so we were told, it appears there are many.

In the days immediately following the Commodore announcement, several companies issued public statements affirming their intentions to stay in the market and to continue support to users. Blue Ribbon SoundWorks, for example, told its customers, "We remain 100% committed to our world-wide Amiga customer base and fully intend to support you with additional Amiga software and hardware offerings." Other such statements were expected as we were going to press.

One of the more enlightening things *AW* learned in talking with developers is how much many of them are looking forward to a new Amiga market—without Commodore. Citing frustration with Commodore's lack of cooperation, poor customer support, and woefully inadequate promotion and distribution efforts—many developers were really animated about future prospects. Phrases like "controlling our own destinies," "a better market arising out of Commodore's ashes," and "saving the technology" seemed to echo like a refrain throughout almost all the conversations.

A more down-to-earth—but perhaps even more refreshing—comment came from Mike Halvorsen of Impulse, the developer of Imagine. When asked about the significance of Commodore's departure, the ever-forthright Halvorsen said, "Who gives a #*!#*? They've been dead for 10 years!" Exaggeration aside, that might just be the point: The Amiga community—Amiga users, developers, vendors, publications—is, and always has been, us!

—DS

1200CD Unveiled at ETCS

LONDON—Despite the parent company's financial problems, Commodore UK and the Amiga CD32 made a strong appearance at April's European Computer Trade Show (ETCS).

The big news was the unveiling of a working prototype of a CD32-compatible CD-ROM drive for the A1200—the **1200CD**. It is a top-loading, double-speed drive—an off-white, square version of the CD32—that allows the A1200 to run CD32 software and play audio CDs. The unit on display—which appeared to be running fine—had an independent power source, and was connected to the right side of the rear of the A1200 via a cable. (It wasn't clear how the final product would hook into the A1200.)

However, owing to design differences between the A1200 and CD32, the 1200CD does not support MPEG to play video CDs. Yet, a Commodore rep indicated privately ►

Commodore Liquidation Plans Remain Unclear

As of this writing, the facts we know about Commodore's liquidation plans are as follows: On April 29, the company issued a statement that in the days following was subject to a wide range of (conflicting) interpretation—from total liquidation of Commodore's entire worldwide operations to various scenarios of partial liquidation.

What's really going on? From what we can piece together from all our sources, Commodore International, the parent company, placed Commodore Electronics Ltd., its major subsidiary, into voluntary liquidation. Company assets are being transferred to trustees who will administer them "for the benefit of Commodore's creditors."

Many of Commodore's regional operations remain open—led by Canada, Germany, Italy, Scandinavia, and the UK, all of which reported "business as usual." As of this writing, there was no clear indication that Commodore International had entered into liquidation—only the subsidiary, Commodore Electronics. Both companies are incorporated in the Bahamas. The Bahamian Supreme Court was to appoint the trustees who will preside over the liquidation.

There are two likely outcomes: Someone may acquire the entire Commodore International operation; or, the trustees may arrange for interested third parties to purchase licensing agreements—perhaps on a nonexclusive basis—to the Amiga technology. In either case, Amiga systems and products should continue to be produced.

—DS ►

To locate the vendors of products mentioned, see the "Manufacturers'/Distributors' Addresses" list on p. 78.



Denny on DOS

HINTS & TIPS FOR MASTERING THE OPERATING SYSTEM

By Denny Atkin

#2—Speech! Speech!

The Amiga was the first personal computer to boast an out-of-the-box ability to talk back to its owner. Its speech synthesizer, called the Narrator or Translator (after the device drivers that make it work), has been used primarily in children's educational programs to provide narration or to read answers aloud. (One wonders if there's a generation of kids out there with traces of a bizarre, slightly mechanical accent.) Some productivity programs, such as ProWrite, have added Narrator support, allowing you to hear your documents read aloud. There are, however, other ways to put your "talking" Amiga to good use.

The speech-synthesis system was updated with AmigaDOS 2.04, providing much clearer speech. (Unfortunately, Commodore didn't renew its license to use the speech programs, and thus versions 2.1 and later of AmigaDOS don't include the speech commands—but check out the "Quick Tip" to see how to give a mute Amiga its voice back.) So, let's look at how to take advantage of your Amiga's speech capabilities.

Say You, Say Me

The Say and Echo commands are similar, except that the former speaks the text following it while the latter prints it to the Shell window. Using Say in its simplest form, you would type SAY followed by the text you want said in quotes, as in SAY "Hello, World!"

If you type SAY without entering any text and then hit Return, a window will open into which you can type sentences to be read aloud. However, typing to live accompaniment isn't useful for much except showing off. Say can become truly useful, though, when used in AmigaDOS scripts.

For example, have you ever been cooking dinner and decided to sit down at your computer to do a "little" work, only to realize suddenly that an hour has passed and the pizza in the oven now resembles a large, black frisbee? Type ED S:TIMER and type the following lines into the editor:

```
.key TIME
WAIT <time> MIN
SAY "Attention, Amiga user!"
SAY <time>
SAY "minutes have passed."
```

Save the file by pressing Esc, X, and Return, and type PROTECT S:TIMER +S to make the script executable. Now you can type RUN TIMER 10 and your Amiga will alert you when ten minutes have passed with a vocal warning. For an alarm of shorter duration, change MIN to SEC in the second line of the script, and type in the number of seconds you want the script to wait. Alternatively, you could change the second line to WAIT UNTIL <time> and then input a specific time for your alarm in HH:MM format.

Say is also handy for tracking the progress of a script running in the background. For instance, suppose you were running a script that contained slow Shell commands to convert pictures from one format to another. You can include Say commands after each conversion command to keep you abreast of the script's progress. You could also use the Echo command to do this, but that's useful only if you can see the Shell window; the Say command is effective no matter what screen is at the front.

There are a number of options you can include on the Say command line to modify the voice. These include -m to specify a male voice, -f for a female voice, -r for a robotic voice, and -n for a natural voice. The -s command, followed by a number between 40 and 400, controls the speed of the Amiga's speech, while -p followed by a value of 65 to 320 modifies the voice's pitch. For example, to have the Amiga speak in a fast-paced, low, robotic voice, you would type SAY "DANGER, WILL ROBINSON!" -R -P 65 -S 220.

> ### Quick Tip
> If you have upgraded your Amiga to AmigaDOS 2.1 or later, the install script leaves the old speech files in place. But if you bought a newer Amiga with no speech synthesis, you need to copy the following files from a Workbench 1.3 or 2.04 disk to your boot disk:
>
> **l/speak-handler**
> **libs/translator.library**
> **devs/narrator.device**
> **utilities/say**
>
> Also, you must paste the entry for the SPEAK: device into your DEVS:MOUNTLIST file, unless you plan to use only the Say command.

SPEAK: Your Mind

AmigaDOS 1.3 and later adds a new logical device called SPEAK:. This device will output all data sent to it to the Amiga's speech synthesizer. By directing output to this device instead of to a file or the Shell, you can have your Amiga speak almost anything. For instance, if you type DIR >SPEAK: RAM:, the Amiga will read the names of all the files in the RAM disk. You can also make your Amiga read text files aloud, again by sending the output to the SPEAK: device; for instance, you might use TYPE >SPEAK: READ-ME.TXT to have the Narrator read a documentation file aloud to you. Another advantage of SPEAK: is that it can also add speech to most programs that can save files as plain ascii text; simply type SPEAK: in the text gadget where you'd normally specify a disk-drive name.

Before using SPEAK: you'll need to activate it by typing MOUNT SPEAK:. Using the OPT keyword, you can include the voice-modification options supported by the Say command to modify the tone of the text being spoken. To have a file spoken in a robotic voice at a moderate speed, send the output to SPEAK:OPT/r/s160. ■

*Denny Atkin is an editor at **OMNI** Magazine and author of **Denny Atkin's Best Amiga Tips and Secrets**. Send comments and suggestions via e-mail to DennyAmiga@aol.com.*

AGA Storm Watch

A "storm" is brewing in the accelerator department at *Advanced Systems and Software* (RS# 121) with the new Blizzard and Cyberstorm series of boards for AGA Amigas.

The **Blizzard 1230-II Turbo** is for power-hungry Amiga 1200 owners and the **Blizzard 4030 Turbo** for the Amiga 4000/030.

The Blizzard 1230 is available in two configurations: a 40 MHz 68EC030 model without a Memory Management Unit, and a 50 MHz 68030 with an MMU. Two sockets on the board allow for the addition of 50 MHz or slower floating-point (FPU) math chips (either PLCC or PGA). The board includes a battery-backed clock and SCSI-2 support.

The 50 MHz Blizzard 4030 Turbo promises to double the speed of your A4000. Look closely at the board and you'll find a PGA socket for an optional 68882-50 FPU, which can dramatically boost such memory-intensive projects as rendering.

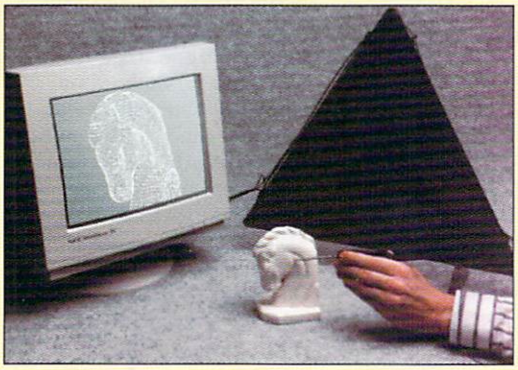
The **Cyberstorm** for the A4000 consists of an '040 or '060 CPU module and memory board, which install onto the Cyberstorm carrier board. It is available in three versions: either 25 or 40 MHz for the '040 model (from $695), or 50 MHz for the '060 ($1995). You can add up to 128MB of fast RAM to the memory board via 32-bit SIMMs.

The optional **Communication Module** attaches to the carrier board to provide a fast SCSI-2 interface, an Ethernet controller, and high-speed serial ports.

The **Cyberstorm Cache Module** connects to the CPU module to provide a second-level cache.

Organic Input

With the **VertiSketch** ***(Blevins Enterprises)*** 3-D digitizing system, LightWave users can create accurate reproductions of physical objects for their animations. It works directly with LightWave Modeler, so no detail or data is lost owing to importing and exporting between different modeling software. The VertiSketch software ($995, alone) features powerful utility commands that allow you to control the placement of sampled data and to edit existing polygons and points. The software is compatible with digitizing hardware from Science Accessories, Faro Technologies, Polhemus, and others. Complete systems start at $2395. You'll need an A2000, A3000, or A4000 with Toaster 3.0 and DOS 2.04 or later. (RS#122).



VertiSketch creates "organic" models.



Alpha Paint—the first fully-integrated 36-bit program for the Video Toaster.

36-bit Paint for Toaster

If you like to "paint-by-numbers," how does 36 (bit) grab you? That's just what **Alpha Paint** ($699.95, ***InnoVision***) for the Video Toaster promises. It combines 24-bit painting and image enhancing with a 12-bit alpha channel for antialiasing, blending, and compositing. The alpha channel paints directly into the Toaster's hardware mixing channel. Better yet, Alpha Paint doesn't require any additional chip RAM, programs, or hardware to operate—it paints directly on the Toaster's display! (RS# 123).



Overheard

Noahji is now the exclusive US distributor of MacroSystem's line of products, including the Toccata, Retina, and VLab. Software updates, technical support, and repair service will also be handled by Noahji (3591 Nyland, Lafayette, CO 80026; phone 303/499-1975).

From p. 4.

that the module could be accommodated via other means, but wouldn't elaborate. David Pleasance of Commodore UK stated that there will also be a CD32-compatible CD-ROM for the A4000, which *will* support MPEG. The drive could be available in Europe as early as September or October.

Spotlight on CD32

The CD32 was another bright light at the show. Commodore indicated that as of April 10, just six months after the machine's release, the CD32 had assumed a dominant position in the UK's CD-ROM market, accounting for 46.2 percent of all CD games sold. In addition, CD32 titles occupied 13 of the 20 slots in the UK Chart Talk roster of CD best-sellers.

At the time of the show, 80 titles had been released for the CD32 and more than 200 are in development—a figure Commodore indicated should increase significantly after it met with prospective developers attending the show.

Many of the early releases have been more-or-less straight ports from the Amiga disk versions, but in coming months we should see an increasing number of CD32-first or CD32-only releases, including the action/puzzle game **Litil Divil**, the ray-traced robotic beat-'em-up **Rise of the Robots**, the graphic adventure **Lost Eden** (formerly Saurus), and the three-CD extravaganza **CyberWar** (a followup to The Lawnmower Man).

This is not to say there was any shortage of disk-based software for the Amiga. Among those were ***Virgin's*** upcoming conversions of the Aladdin videogame for Genesis and Crash Test Dummies; ***Renegade's*** LucasArts-like **Flight of the Amazon Queen, Ruff 'N' Tumble** and **Elfmania**; ***Millenium's*** **Pinkie**; and a whole raft of games from ***Team 17***—everything from a bowling game to **Alien Breed II: Tower Assault** to a yet unnamed 3-D game.

Sealed With an ACE

Commodore also announced the establishment of a Commodore Seal of Approval—a stamp of quality available to peripheral and software manfucaturers after their products undergo rigorous testing. Scanners, disk drives, and RAM cards are expected to be among the first tested.

The company came to the show with an ACE up its sleeve: a second Amiga Centre of Excellence, this one located in central London. The two ACEs—the first opened in Wales in March—are intended to provide one-stop service for professional Amiga users looking for high-end multimedia help.

—Peter Olafson



Prime-Time PD

ONLINE SOURCES FOR FREELY DISTRIBUTABLE SOFTWARE

By Tim Walsh

Found: rumor, debate, files, and info

No discussion of recent online happenings would be complete without some mention of the fascinating financial soap opera that's unfolded on the nets over the past few weeks. After Commodore released its most recent quarterly earnings in early April, the messages areas were ablaze.

Since not all *AmigaWorld* readers have access to the nets, I decided to share some notes I found in these online venues. The inaccuracy of these judgement calls was exemplified by a well-intentioned member of the Amiga User area on CompuServe. This individual gave a rather convincing report of the woes brought on by Commodore's debts, only to conclude with a note that Sage Technologies recently completed the acquisition of CBM, Inc. That was true—except the CBM in question was not Commodore Business Machines!

A member of the Amiga Roundtable on GEnie suggested that the Commodore Shareholders Movement form a support group. Another GEnie user criticized *AmigaWorld* for not commenting on the happenings, as if commentary from *AmigaWorld* might settle Commodore's financial affairs. (*AW* does, however, address the Commodore situation in this issue—see pp. 2, 4.)

Another individual on CompuServe recommended: Buy an A4000 and don't fret about the decision. His reasoning was that any computer other than a new-generation Power Mac or Pentium machine will grow obsolete before the A4000 does. Not surprisingly, no one argued with his logic.

Looking At Files

Enough Commodore commentary—onto the online files. Maybe it's because I'm always filing computer files away into obscurity that I really like programs that help me find misplaced ones. A utility that rapidly scans your Amiga's devices for files or directories, *FindIt 1.12* by Enola Productions, was designed apparently for folks like me. It relies on Stephan Stuntz's ever-popular MUI to create a user-friendly interface and graphic depictions of volumes and directories.

After launching FindIt, a list builds as files matching your search criteria are displayed. FindIt also searches using dates. These are entered in day-month-year format, or as "today," or "yesterday." Finally, FindIt lets you search by file size.

If you don't need a highly sophisticated file-searching utility, check out *VFind* by Vicky Staubly. A $6 shareware file finder, VFind consists of three buttons, a status area, and a results list, all of which reside on the Workbench. Select the device and directory where you want to begin searching and the results window lists all the matching files. If the list is lengthy, a scroll bar lets you peruse the list.

SysInfo Upgraded

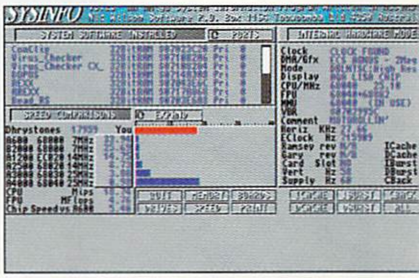
Just as I was putting the finishing touches on this column, another update (*3.23*) of *SysInfo* by Nic Wilson appeared. A $20 shareware program, Sysinfo accurately interrogates hardware, software, modes, and the speed of your Amiga.

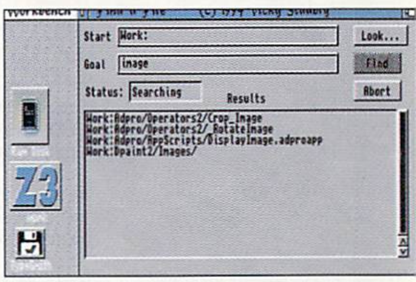
Thanks to a unique GUI interface, mouse clicks instantly reveal information you've been craving to see in the areas of memory, boards, drives, and libraries. Click the Library option and it toggles through the device drivers, resources, ports, and tasks. SysInfo also reveals the operating speed of all devices, such as floppies and hard drives. Another click or two calls up more information on any boards, their memory addresses, configuration, size, and so on.

SysInfo also measures your Amiga's speed in MIPS and also MFLOPS (if your machine is equipped with an FPU). The program also provides a chart that graphically compares your system against six Amigas—ranging from an A600 to an A4000/040. More clicks toggle among Cache, Burst, and Copyback modes to see the difference that each setting offers.

In a flash, you'll discover which version of the Agnus chip is inside your computer and whether it's 512K, 1MB, or 2MB in size. The Horiz KHz option shows the horizontal scan frequency of the current display, while EClock Hz shows the frequency of the EClock, used for checking CIA chips.

With a couple of updated file finders, and a new version of SysInfo, I feel ready to take on the world . . . Now, in which directory did I bury the document outlining my plans to do that? ■





SysInfo 3.23 gives you the "inside scoop" (top). VFind uses a window on the Workbench to locate errant files (bottom).

Network Voice Numbers

BIX
800/695-4882
617/354-4137

CompuServe
614/457-0802
800/848-8199

Delphi
800/695-4005

GEnie
800/638-9636

Portal
408/973-9111 ■

Write to "Prime-Time PD" c/o ***AmigaWorld*** *Editorial, 80 Elm St., Peterborough, NH 03458; or contact Tim through the Internet at twalsh@bix.com.*

R E V I E

TBCPlus

External time-base corrector.

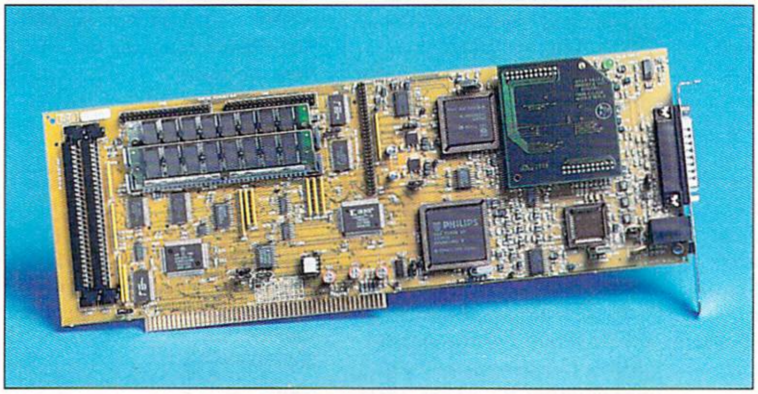
Great Valley Products, $949; frame RAM SIMM $249; Digital Comb Filter $99.
Amiga 2000, 3000, 4000.
2.0/3.0 compatible.
Hard-drive installable.
Not copy protected.
Accelerator compatible.
Installation: **Easy.**
Minimum system: **AmigaDOS 2.04 or later, 2MB, hard drive.**
Recommended system: **4MB, AGA Amiga, hard drive.**

Looking for a new, carefully engineered, infinite-window time-base corrector? If so, be assured that TBCPlus goes far beyond the typical product by offering myriad video options with significant signal processing and control. There's cross-standard conversion, transcoding of Y/C and composite signals, and multiple inputs and outputs for all manner of video signals.

Another thing distinguishing TBCPlus from other TBC cards is the fact that it is designed specifically for the Amiga, and it thus requires a Zorro II or III slot instead of the usual PC slot. Software control, too, is handled via the Zorro bus—instead of the serial port.

Pro-sumer Product

TBCPlus includes 1MB of framebuffer RAM and an empty SIMM socket for an additional 1MB. There are sockets for 2 or 8MB of optional system fast RAM, plus a Digital Features Bus and Video Expansion Bus. You can also add optional Digital Comb Filter and SMPTE/EBU time-code modules. My review unit came equipped with 2MB of framebuffer RAM and the Digital Comb Filter.



TBCPlus installs easily into any vacant Zorro II or III slot.

To locate the vendors of the products reviewed, see the "Manufacturers'/Distributors' Addresses" list on p. 78.

The rear of the card contains a DB-25 connector, with a 14-inch "ponytail" of cables ending in RCA, BNC and 4-pin mini-DIN (S-VHS) Y/C connectors for video and time-code signal I/O. Each cable is labeled for easy identification. An RJ66-style jack provides the connection for an optional I^{2}C external serial-control box.

Multiple video support gives TBCPlus a true international flavor. It accepts input from SECAM, PAL-B/G, PAL-H, PAL-I, PAL-N, PAL-M, NTSC-M, and NTSC-4.43. Output signals include NTSC-M, NTSC-4.43, PAL-B/G, PAL-N, and PAL-M. GVP advises in the manual that while the quality of conversion is "suitable for all forms of 'pro-sumer' video and business teleconferencing applications," it may not be possible to achieve "complete broadcast-quality conversion."

The transcoding is independent of the standards conversion, so you can input Y/C NTSC and output PAL composite if you so desire. You can connect two composite inputs and one Y/C in, or use the composite inputs as a second Y/C input. With its Y/C and composite transcoding and simultaneous Y/C and composite output capability, this unit has covered all the bases.

Signal Ahead

The onboard processing amplifier is fully software controlled. The roster of controls and calibrations that the software provides reads like a broadcast engineer's wish list. You have command over aperture frequency and filtering factors, band pass and coring filter, and cross-color reduction and other cross-standard compensations. Furthermore, TBCPlus gives you videotape-noise reduction and flutter-line exclusion; gain controls for chroma, ACC, blackburst A/D, CVBS-Y/C, AGC, CVBS/Y,

W S

and CVBS/Y A/D; chroma and luma delay; and the usual brightness and contrast settings—to name just a few of its many features. The software allows both global and individual control of multiple TBC cards. For hobbyist-level users, the presets and automatic controls suffice to control the signal.

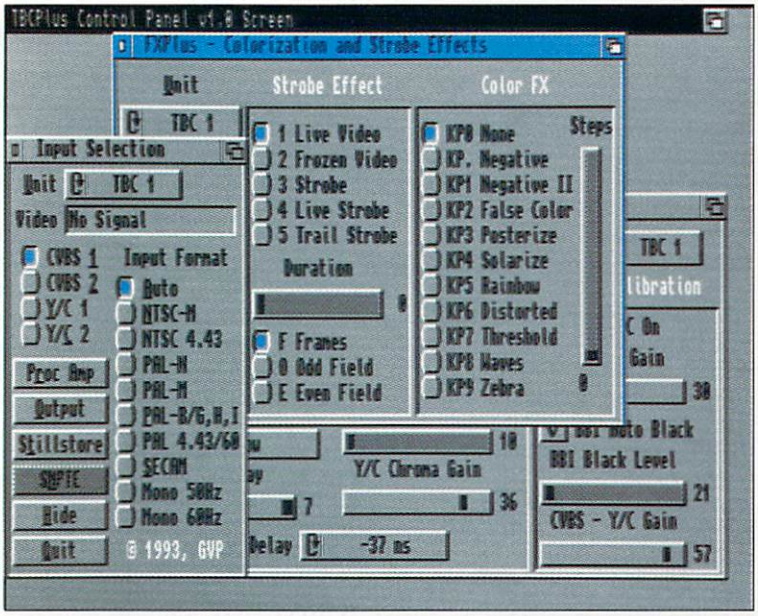
As mentioned above, it is SMPTE/EBU time-code capable, with complete control over the selection of external or internally generated VITC or LTC time-code source. It also provides support for NTSC/29.97, PAL/25, Film/24, and B&W/30 time-code standards, plus an NTSC drop-frame option; there's also a Burn-in Window option for the output.

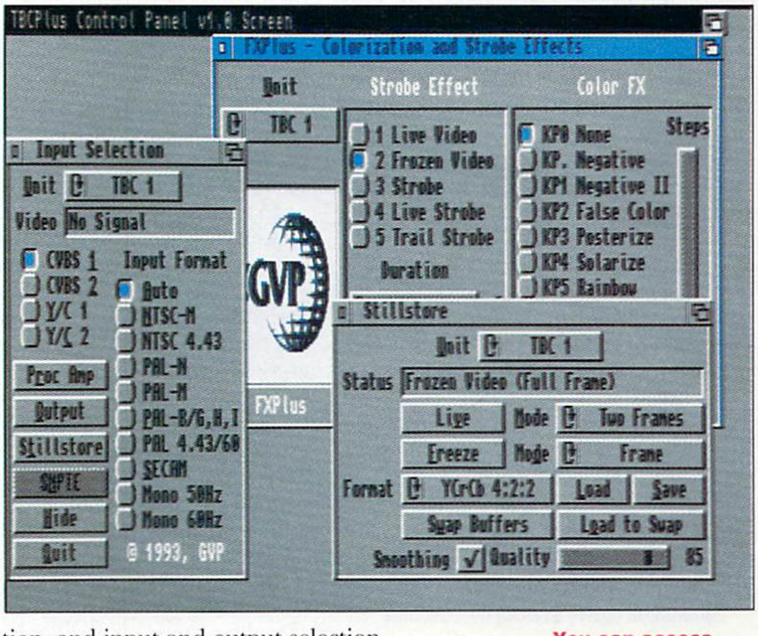
Framebuffer RAM is available for framegrabbing, providing complete control over freezing odd or even fields or whole frames of video, which you can then save to disk in a variety of formats, including 4:2:2 digital, Caligari .6rn, IFF-24, and JPEG. Any of these formats load into TBCPlus, turning it into a 24-bit framebuffer. These images are displayed at the TBC's video output, not on the computer's RGB monitor. By adding the optional second megabyte of framebuffer RAM, you can load two images and switch between them by swapping buffers.

Strobing and ten preset colorization special effects are accessed through an FXPlus menu. These effects are very much like some produced by the Video Toaster's ChromaFX slice. Among them are Negative, Solarize (ChromaFX Crazy Nuke), Rainbow (ChromaFX Solarize), Zebra (ChromaFX Chrome), and Posterize. While you cannot customize the FXPlus effects, such as ChromaFX, these effects offer two advantages. When you "freeze" the video with TBCPlus while the effects are activated, the video you grab includes the effect (by contrast, the Toaster cannot grab its own ChromaFX effects). Also, the TBCPlus effects work on grabbed frames or images loaded into TBCPlus (whereas the Toaster's ChromaFX works only on incoming video. With TBCPlus, you can even strobe while using the effects).

Good Reading

The software interface resides on its own custom screen, a public screen, or the Workbench screen. It can also open in a "hidden" condition without a window and be operated completely via the keyboard or ARexx. Options accessible through ARexx include the proc amp, freeze-frame control, time code, special effects, buffer controls, signal calibration, and input and output selection.





You can access devices and modes via the control panel on TBCPlus.

In the manual, discussion of each menu item is accompanied by details on its ARexx command usage, values, results, and examples. This eliminates the flipping back and forth that is necessary with the usual separate ARexx section. I was impressed with the thorough and well-organized manual—one of the best I've seen for any Amiga product.

The TBCPlus software also provides a Render and Scanner module for use with GVP's ImageFX software. You can render from ImageFX to the TBCPlus framebuffer RAM, using it as a handy composite 24-bit display board. ARexx-compatible software, such as ADPro, could do the same through an ARexx script. This method, however, involves the roundabout method of saving the image to RAM, and then loading from RAM into TBCPlus.

Toaster Tips

I do have a few small complaints. The LED that ►

indicates valid video output from the board is visible only when the Amiga's cover is removed, so keep a screwdriver handy. Also, TBCPlus is not particularly Toaster-friendly, as there's no button on the Toaster's Switcher screen to give instant access to the TBCPlus screen. The Ctrl/Ctrl Alt/Alt keypress route is a necessity.

I also discovered that when I set the TBCPlus to any strobe mode and then returned to the Toaster to use any Switcher effect, the strobe effect halted during the switch. The strobing video would either freeze during the switch duration, or it would cease strobing and appear as normal video. Once the switch effect was complete, it would return to its strobing. Obviously, the TBC requires CPU time to produce strobing, instead of its being controlled completely by the TBCPlus board. This limits the usefulness of the strobing abilities in conjunction with the Video Toaster. The only Toaster switch that did not affect the strobing was a simple "take."

Minor shortcomings notwithstanding, the interface, ARexx compatibility, and software flexibility of TBCPlus make for easy integration into any sort of application, from video production to various forms of multimedia work. If you are considering buying a TBC for your Amiga, you will find your time well spent with a good, long look at the TBCPlus.

—Fred Hurteau

AmigaLink

Spectronics International USA,
$259.95 for two nodes;
additional nodes $124.95 per machine

All Amigas, CDTV (CD32 with an add-on that provides a floppy port).
1.3/2.0/3.0 compatible.
Hard-drive installable.
Not copy protected.
Accelerator compatible.
***Installation:* Easy.**
***Minimum system:* Two Amigas running AmigaDOS 1.3.**
***Recommended System:* Multiple Amigas running AmigaDOS 2.04 or later.**

Flexible networking system.

Networking Amigas isn't easy, because they suffer from a lack of standardization with their respective expansion ports. You can get Arcnet and Ethernet cards that plug into Zorro slots, but that's useless if one of the machines you need to network doesn't have slots. Custom solutions for the A500 and A1200 are available, but they're pricey.

The freely distributable ParNet networking system is an inexpensive solution, but you must disconnect it every time you need to use your parallel port for something else, and it supports only two machines. Enter AmigaLink, a solution that works with all Amiga models, as well as CDTV. This simple but reliable networking package achieves its universal compatibility by plugging into the Amiga's floppy-drive port.

Gather 'Round

AmigaLink comprises a disk with the necessary software, a concise but complete 35-page manual, a cable, and two floppy-port expansion connectors. The package supports up to 20 Amigas, using a maximum of 330 feet of cabling.

Setting it up is easy: Just attach an expansion connector to the floppy port on the back of each of your Amigas, or to the pass-through on the back of an external floppy drive; then install coaxial cable between each of the network connectors. (If your external floppy drive doesn't have a pass-through port, you'll have to disconnect it or purchase a Y-adapter from Spectronics.) The coaxial connectors are T-style, with terminator plugs covering the unused connectors at the ends of the network.

Software installation is even easier—everything is automatically copied using Commodore's Installer application. It's a far cry from setting up complicated PC networks.

Since AmigaLink is a peer-to-peer network, no single computer acts as a file-server for all the others on the network. Rather, you choose which devices on each computer are available; then any computer on the network can access those devices. Once you have installed the device drivers, load the Export program on each computer and select which drives you want to make available on the network. To determine which drives should be available on your workstation, you use the Import program, selecting each computer from which you want to import drives. (You assign a unique name to each computer.) The Import and Export programs are nicely done, with standard AmigaDOS 2 graphical interfaces. (The functions are available on AmigaDOS 1.3 systems such as CDTV, but you'll have to use the Shell to set them up.) The network driver follows Commodore's SANA II networking standard, so you can use other networking software such as Envoy (Intangible Assets Manufacturing), which offers AmigaLink users such advanced features as file security, user accounts, and the ability to make individual directories available to network users. (Intangible Assets is planning to offer an Amiga-Link/Envoy bundle.)

Imported drives work just like local drives: They appear as icons on the Workbench screen, and you can access them from the Shell and application file requesters just as if the drive were directly connected to the computer. The only difference is speed—which is AmigaLink's only drawback. Because it uses the floppy ports, it's limited to speeds similar to those of floppy disks.

DiskSpeed benchmark tests with loading some large applications showed actual speeds ranging from 25K per second to a high of about 50K per second when using a large buffer. Whether this is a problem depends on how you plan to use the network. If you choose to keep all your applications on one computer, you'll really notice AmigaLink's slowness; major applications may take 20 to 30 seconds to load. On the other hand, the speed isn't that noticeable when working with data files under 100K.

Depend On It

I found AmigaLink to be very reliable in operation. I set up a three-machine system with an A1200, an A4000, and a CDTV, and tried saturating the network by copying about 100MB of data from an AmiNet CD-ROM in the CDTV's drive to a Bernoulli disk attached to my A4000. Even with all that activity, I was able to read transfer data back and forth between all three computers with no problems and little additional slowdown. The network did lose its connections a couple of times during the course of testing—once when I accessed the A4000's floppy drive locally—but overall it was solid.

The package supports network printing: You use the CMD program (see "Hidden AmigaDOS Gems—Part 3," May '94, p. 36) to route the printed output from your programs to a spool directory on the computer with the printer you want to use, and the spooler will print that file. There's no support, however, for networked modems (AmigaLink is too slow for that) or electronic mail.

Is AmigaLink the networking solution ►



STILL THE BEST GRAPHIC BUY!

Create spectacular true color animations on your Amiga.

Paint, digitize and display beautiful full color composite video images on any Amiga. • Capture an image in 10 seconds from any color video camera or stable video source. • Full-featured paint, digitize and conversion software included. • Compatible with AGA 1200 and 4000 Amigas in NTSC/PAL modes. Two to four times the speed of AGA animations (DCTV vs. HAM8) with greater color and resolution.

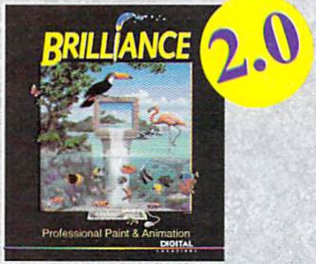
Compatible with all popular 3D, rendering, and graphics packages including: AD-Pro, Aladdin 4D, AmigaVision, Brilliance, Calligari, Cinemorph, Draw4D, ImageMaster, Imagine, LightWave, MorphPlus, Real 3D, Scala, Scenery Animator, Sculpt, VistaPro, and many others...

DCTV (NTSC or PAL)
$299.00

RGB CONVERTER

Allows the use of DCTV with standard RGB monitors (1084) in standard NTSC or PAL modes. Also permits the use of external genlocks like our SuperGen.

RGB Converter
$199.00



ANNOUNCING BRILLIANCE VERSION 2.0

Version 2.0 of Brilliance has been designed with productivity in mind. Several new features enhance this already powerful program. Features like *Flip Frames* that allows the animator to flip through drawings. *Rub Thru* that makes compositing easier. *Load and Save Tween paths* enabling much longer and repeatable brush moves. Faster and more accurate Tweening. *True View* option for magnification. And much, much more.

Brilliance!
The best just got better!

NOW! Without Copy Protection

NOW!
HOT NEW PRICE
Brilliance 2.0
$99.00
Upgrade 1.0 to 2.0
$49.00



Video Slot Box



NEW!

INCREASE PRODUCTIVITY!

• Four Video Slots! • Three PC/AT bus slots (power & ground only) • 230W switching power supply • Two 5.25" drive bays • One 3.5" drive bay

The Video Slot Box is a revolutionary new mini-tower that expands any Amiga A2000, A3000, or A4000 to have four complete video slots, three additional PC AT bus slots (Power and Ground only) for compatible cards such as our Kitchen Sync TBC, room for two 5.25 inch half height devices and one 3.5 inch device (You can use this room for SCSI hard drives, optical drives, flopticals, tape drives, or anything else that fits.), and a beefy 230 watt switching power supply.

The Video Slot Box provides these solutions:

Use the Video Toaster with an Amiga A3000. Use more than one video slot product in your Amiga. Easily move your desktop video environment between Amigas.

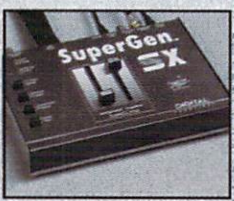
The slots in the Video Slot Box are complete video slots with all the capabilities of the video slot within the Amiga. You can place up to four video slot products into the Video Slot Box. A front panel selector lets you choose which product is actually in control of the video slot within the Amiga.

With products that are "video slot masters" such as the Video Toaster or a genlock, only one of them can be active at a time. The video slot box allows you to easily switch instantly between several such products within one machine without having to ever swap boards. And switch them with software!

Get The Most Out Of Your Amiga

Video Slot Box
$995.00

NEW!



SuperGen SX

S-VIDEO AND COMPOSITE GENLOCK & OVERLAY SYSTEMS

SuperGen SX

- Only broadcast quality S-Video genlock for less than $1000
- AGA compatible. Compatible with all Amiga models
- Two independent dissolve controls
- Software controllable
- Notch filter

SuperGen SX
$749.00

SuperGen 2000S

- Broadcast Quality
- For A2000 only - internal
- Built-in Proc-amp
- S-Video and Composite Input & Output

SuperGen 2000s
$1195.00

The Kitchen Sync



The Kitchen Sync provides two channels of time base correction - the perfect low cost TBC solution for the Video Toaster™.

With a Video Toaster, the Kitchen Sync provides a complete A/B roll editing system.

Two complete infinite window time base correctors on one IBM AT/Amiga compatible card • Absolute 100% broadcast quality • Composite or Y/C video in • Includes easy to use external control panel • No waveform monitor needed • Variable speed strobe • Freeze Frame, two rock-solid Freeze Fields • Low power consumption • Lowest TBC price per channel • Works with consumer grade VCRs

Two Complete Time Base Correctors On One Card!

Kitchen Sync
$1295.00

Genlock Option

Required to synchronize the Kitchen Sync to an external video source.

Genlock Option
$150.00

S-VHS Option

Required to enable S-VHS/Hi-8 (Y/C) video outputs.

S-VHS Option
$150.00

FREE SHIPPING on all VISA & MC orders in the US.

COD - Cash only - add $10.00.

Call by 2:00pm PST/5:00pm EST for same day shipping.

VISA MasterCard

Worldwide Distributors and Dealers Wanted. Inquiries invited.

CALL
DIGITAL DIRECT
916-DIGITAL
916-344-4826
9:00am to 5:00pm PST M-F
For technical information call 916-344-4825

DIGITAL CREATIONS

P.O. Box 97, Folsom CA 95763-0097 • Phone 916•344•4825 • FAX 916•635•0475

SuperGen SX, SuperGen2000s, DCTV, DCTV RGB Converter, Kitchen Sync, and Video Slot Box are trademarks of Digital Creations, Inc.
Video Toaster is a trademark of Newtek, Inc. IBM and IBM AT are registered trademarks of IBM, Inc. Amiga is a registered trademark of Commodore-Amiga, Inc.

Circle 16 on Reader Service card.

for you? If all your Amigas have open Zorro II or III slots, you're probably better off going for faster networking-card options. But AmigaLink supports the older (read: network-problematic) A500, A600, A1000, A1200, and CDTV computers. Even CD32s are supported, if you attach an expansion chassis that adds a floppy port. If these machines are part of your computing equation, AmigaLink effectively stops the tiresome floppy-disk shuffle.

— Denny Atkin

MIDI sequencer software.

SEQUEL

***Diemer Development*, $139.95**

All Amigas.
1.3/2.0/3.0 compatible.
Hard-drive installable.
Not copy protected.
Accelerator compatible.
***Minimum system:* 2MB.**
***Recommended system:* 4MB.**

Sequel is a new MIDI sequencer and sample-playback package that puts a different spin on the linear tape-deck analogy. The program presents a basic screen for recording 32 track patterns that can be linked together into songs. Two small, deceptively sparse Workbench windows possess layers of powerful features and functions that reveal themselves only as you explore the program.

Sequel sports some mighty convenient features once you get a handle on them or, in some cases, realize that they exist. For instance, you never have to click a track-record button—the next track is automatically activated for recording when you stop the sequencer. The most frequently used functions are immediately available with either a mouse click or a keyboard equivalent. There's no scrolling through nested lists of menus and submenus.

FUNCTIONAL FEATURES

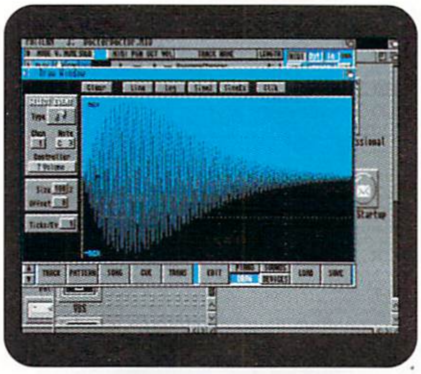
Once installed using an included installer, sequencing functions are abundant. You can use the internal Amiga sounds and MIDI sounds on any track. Tracks can be named, disabled, recorded on, merged with one another, muted, soloed, deflammed, copied, cut, and pasted. A velocity meter shows how hard keys have been hit, and the sound section displays the MIDI channel, program number, octave, and MIDI volume, or the Amiga sound's name, pan position, octave, and volume. Like most headings in Sequel, the Track Name column performs multiple duty, depending on which name is displayed in the button.

Track Name allows a descriptive comment for each track. Clicking the button changes the display to show the MIDI device name, program name, or Amiga sound name for each track. The Length button shows the length and size of a particular track.

Few main program screens display as much information as the basic window in Sequel. To the right are two sets of control panels, wherein you determine the MIDI status of the computer, the status of the serial port in general, whether or not you use the internal sounds, and so



Circle 26 on Reader Service card.



Music—Sequel style.

on. A Thru panel lets you direct user-selected events to any MIDI channel from your master controller in one of six different modes.

Split mode sends events to two different user-selected channels, splitting at middle C; Lo-mode and Hi-mode send out only low or high events, respectively; Lower and Upper modes send all events to their respective tracks; and Layer mode sends all events out twice, once to the lower and once to the upper track. All modes are available to both MIDI and Amiga sounds. You can vary the tempo from 28 to 320 beats per minute and the metronome can generate MIDI or Amiga sounds in addition to a visual flash.

Toggling the Panels button brings up the Record panel. Options there include linear or loop recording (both merge and overdub recording are supported), and a filter that determines which events will be recorded—whether internal, external MIDI, or MTC-to-SMPTE synchronization—complete with frames per second and start-time offset choices.

Song Patterns

The initial Tracks window is actually a Pattern window. You can save the whole pattern or any section of a pattern, copy and paste a pattern's program settings, and initialize the tracks for a new pattern. Patterns are linked into larger works called Songs. You can insert patterns and later move them anywhere in the arrangement, and they, as well as the entire song, can be made to repeat. You can save a variety of complete pieces of music as patterns and "juke-box" them together in Song mode, or even have parts of a song designed in different patterns and hitch them together for the final production.

Sequel employs an event list for editing, though it's not as daunting as you might think. The list can autoscroll, playing the notes as it goes; list all or some events, display attack and release velocity; and mark blocks for editing, quantizing, looping, and so on—all in a manner more reminiscent of graphic editors than event-list editors.

The program can store four banks of cue points that you select for quick access to any portion of your music. The Auto-Copy feature lets you copy a section of material from any pattern and track to any other pattern and track in your song. The Draw window allows you to define a contour for any continuous controller message, including tempo. You can select from a predefined bank of contours, including sine wave, logarithmic and linear, or draw your own in free-hand. You can even change the shape of the internal sound waveforms.

The Device list lets you create and assign patch lists of your favorite synths that Sequel can insert in the MIDI-device and program-name listings, and you can assign a separate device to each MIDI channel. Sequel also offers three different numbering schemes to accom-

Continued on p. 48.

The
Ultimate
Hard Drive

FAST....14ms avg. access, 1.6 to 2.3MB/sec max (AT) Data Transfer Rate (to/from media) 4.0MB/sec max (to /from buffer).
HUGE....Unlimited storage with 105MB cartridges.
QUIET....Shhhh-Listen. You won't believe it.
SMALL....3.5 X 1 Inch with shirt pocket cartridge.
RUGGED....2 year Warranty, 100,000 hours MTBF
SIMPLE...Customer service, all day every day.
VERSATILE...Something for everyone.
RELIABLE...SyQuest Removable Technology.
EASY...Special Auto-Diskchange driver-no rebooting.
INTELLIGENT...64K "Look Ahead" buffer.
COMPLETE...Includes all cables, 5 1/4" mtg bracket and Software. All you need is in the box.

DATAFLYER
105&270SQ

New 270Mb Size



The wait is over. Finally...a hard drive that is truly practical. One that is economical enough to use for backing up and transporting large files and fast enough to use as the primary drive. The DataFlyer 105SQ or the 270SQ is both of these and more. New SyQuest removable technology insures perfect data integrity. The 270SQ reads and writes 105 Mb cartridges. Special version of 3105/3270AT direct from SyQuest with our special driver guarrantees compatibility with the A4000 including diskchange. The drive is available in several configurations including internal for the AT and internal and external for the SCSI. It is also available bundled with an AT or SCSI controller, if required. Contact your Amiga dealer or Expansion Systems for details.

Factory Direct Limited time offer A4000 IDE internal	105Mb	270Mb
	$398	$649

FEATURING SyQuest REMOVABLE TECHNOLOGY

EXPANSION SYSTEMS
Making Technology Affordable Since 1986

Call 510 656-2890
FAX 510 656-5131

DataFlyer 105/270SQ is a trademark of Expansion Systems © 1994 Expansion Systems. SyQuest is a trademark of SyQuest Technology.

Circle 62 on Reader Service card.



ILLUSTRATED BY BOB SCOTT

CROSS-PLATFORM COMPUTING — PART 1: PC

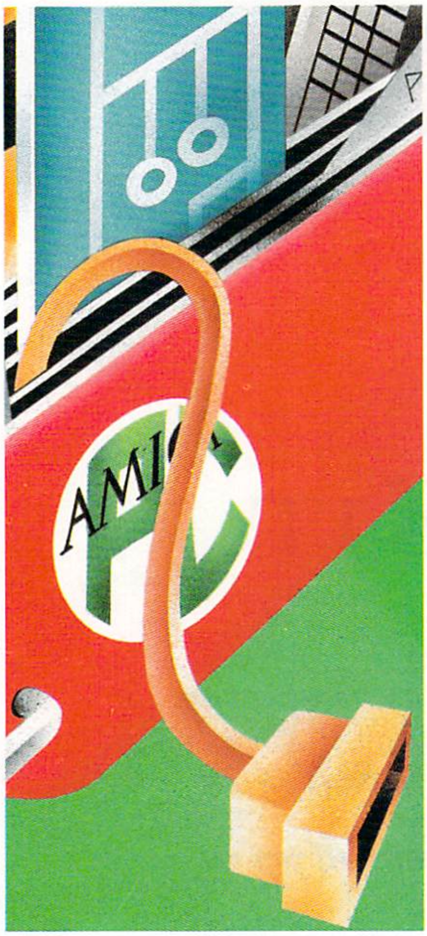
The Amiga User's PC SURVIVAL KIT

This month and next, AW will present a feature on cross-platform computing issues relevant to Amiga users. Here we focus on what you need to know —with specific recommendations—if you use Amigas and PCs in your work.

If this were a perfect world, there would be no need for cross-platform compatibility. Every personal computer owner would use an Amiga, and even today's most prominent PC and Mac developers would be at our beck and call. Alas, Eden eludes us; but perhaps we have the next best thing. The Amiga is unique among personal computers in several respects, not the least of which is its ability to emulate other operating systems. Although Power Macs can emulate PCs, the opposite is not true. The Amiga, meanwhile, can emulate both these systems with a little help from third parties. And thanks to superior Amiga software, it can elegantly swap files with scores of other-platform applications.

Because you have told us you want more information on cross-platform computing, we've decided to explore interplatform issues over the next two months. Here, we've put together a survival kit for Amiga owners needing PC compatbility. In the August issue, we'll ►

BY DAVE JOHNSON



motor into Mac territory.

Who Needs PCs?

Nearly a quarter of all *AmigaWorld* readers claim to use some sort of PC or PC emulator in addition to their Amiga. Why is that? Well, some folks found the past year's rock-bottom prices on high-powered clones irresistible. Others purchased a Commodore 386SX Bridgeboard a few months back at closeout prices. Some people need a PC or emulator to be compatible with their office enviroment. Others simply want the best of both worlds. If you're one of these people, this article is for you. (For information on PC emulator hardware, see "The PC Connection," Jul. '93, p. 35.)

Hardware Made Easy

One of the nicest aspects of using an emulator is the synergy you get from sharing components between the two systems. If you use a multisync monitor with your Amiga, for instance, you can access the same display from your emulator by attaching an A/B switchbox. The 386 and 486 boards are compatible with ***Vortex's* Monitor Master** ($128), an electronic switchbox that toggles between the Amiga and a VGA card with a simple Left Amiga-Q.

The real question, though, is what kinds of options are available for data storage. The conservative route is to add a dedicated IDE hard disk to your emulator. Vortex's Golden Gate emulator includes an IDE interface, so all you have to do is plug it in and go. Commodore Bridgeboard owners need to purchase a hard-disk kit that includes an IDE adapter. While not as expensive as they once were (hard disks are now well under $1 per megabyte), this path is certainly not a thrifty one.

Instead, explore ways your Amiga and PC can be data-storage partners. Most emulators allow you to dedicate a partition on your hard disk to MS-DOS or create a (much slower) MS-DOS virtual drive in an AmigaDOS file. SyQuest drives work particularly well as AmigaDOS devices with a partition for the PC. Not only does this allow you to create a variety of virtual machines (boot from the Windows SyQuest, DOS SyQuest or OS/2 SyQuest as necessary), but the drive can still read Amiga-formatted cartridges just fine.

A very popular way to increase storage space on PCs these days is by using global compression software. Utilities such as DoubleSpace (included in MS-DOS version 6) and Stacker (by Stac) can effectively double the space on a hard disk (much like using Nico François' PowerPacker—from Jumpdisk—on the Amiga). Before you double your hard disk, though, remember that disk-compression software (unlike PowerPacker) fundamentally changes the way your

Well Connected

If there's one truth in computing today, it's that you can never be too well connected. Computers aren't islands anymore, and people expect to be able to use files interchangeably, within any application and on any computer.

The Amiga has long had a distinct advantage when it came to portability of graphics files between applications: They are all IFF. When swimming in the bigger pool of PCs, though, we need to be able to tap into their multitude of formats, and let them use ours.

In Windows, one of the best file-conversion tools is HiJaak (Inset Systems). HiJaak has long included an Amiga IFF loader/saver, but still supports only traditional IFF formats (not IFF-24 or HAM). If you want to be able to use Amiga IFF-24 images in the Windows environment, you're better off with Black Belt's WinImages: F/x, an image processor based loosely on the company's Imagemaster R/t.

On the Workbench screen, ASDG's ADPro, GVP's ImageF/X, and Imagemaster read and write nearly every PC format conceivable. Cloanto's Personal Paint supports GIFs, and PageStream includes modules to read many graphics formats, including GIF and PCX.

Unfortunately, Amiga word processors stack up miserably at importing or exporting anything but ascii (text-only, without formatting) text files. WordPerfect reads and writes to the same file format as its PC version, though the Amiga version is no longer actively supported and its sister program on the PC is eons old. This adds up to a low level of functionality.

Impulse makes both MS-DOS and Amiga versions of the premiere modeling software, Imagine, and both programs use the same data-file format. Likewise, Black Belt's Windows products (Morph and F/x) create filmstrips and IShapes that Imagemaster R/t can load. (For further information on file swapping, see "Cross-Platform Computing," Oct. '93, p. 35.)

—DJ

hard disk is organized. If you are depending on CrossDOS to read a drive, don't compress it. Let's hope Consultron will eventually make CrossDOS compatible with compressed disks.

FITTING IN

I live by one somewhat rigid principle when computing on a PC: I use only Windows software. There are many reasons to avoid DOS software, the biggest of which is memory. PC software has to cram itself into the first 640K of RAM regardless of how much memory your machine has installed—and it's you, the end user, who typically needs the crowbar. If you have to use DOS-based software, you can optimize your memory by loading device drivers and other system software into memory beyond the first 640K. Luckily, you don't have to know much about MS-DOS to do that anymore; there are a number of utilities that automate the process. I'd recommend MemMaker (included with MS-DOS 6) or Quarterdeck's QEMM as the best digital crowbars.

If you run Windows, most of those sticky memory -anagement problems go away. Even better, software incompatibilities (which even an optimist should expect to encounter with an emulator) are virtually nonexistent within Windows. The most likely type of problem you'll find in (or out) of Windows is with software that attempts to hit hardware directly—particularly hardware you don't actually have, such as a true PC floppy disk. Disk back-up and utility software in particular are notoriously fickle about needing to reach out and touch the real thing.

CUSTOM CONFUSION

We Amiga users don't have to worry about the nuts and bolts of our computer when installing new hardware. Amiga expansion cards are standardized and completely auto-configuring.

PC hardware is a bit more complicated, though. PCs use ISA, EISA, and Local Bus interfaces; they require the user to become expert at setting jumpers and configuring IRQs, DMAs, and hardware Addresses. (What were they thinking when they made this stuff up?) ISA, the most common type of expansion card, works with all PC-compatible, and is the sort that fits in the A2000, A3000, and A4000 when used with a Zorro-slot emulator. Both the Commodore and Vortex boards can handle nearly any ISA card you throw at them, including notoriously fickle network cards. If you do decide to throw some into the mix, be warned that installation of ISA cards is user-hostile. The best strategy to follow is to write down exactly how the board is configured (IRQs in particular) and store it somewhere you'll remember—in your computer manual, for instance. That way you can track down problems when installing another card later.

IRQs, incidentally, are Interrupt Requests, which are the means for getting short access to the computer's processor during each cycle. There are a limited number of IRQs in the system, and in most cases, Interrupt Requests cannot be shared. If your PC or emulator crashes repeatedly after you've installed a new component, it is often because the new part is trying to "talk" to the processor using the same IRQ as something else in your system.

Local Bus is the generic term for expansion slots that are designed to alleviate the bottleneck occurring in fast PCs at their slow data ports. Neither VLB (VESA Local Bus, a hardware standard established by a group of video-card manufacturers) nor PCI (Peripheral Connection Interface, a somewhat more sophisticated standard designed by IBM) will fit in an Amiga, because they have a completely different pinout than ISA cards. By the same token, don't mistakenly write off software that mentions VESA on the box—that's something else entirely. The same video vendors who brought us the VESA bus also established a video-display protocol to make it easier for programmers to use the hi-res modes of almost any display card. All we're talking about are video drivers, which are usually included with the software in question, or are at least available from the video card's manufacturer—usually via BBS.

> **Amiga expansion cards are standardized and completely auto-configuring, but PC hardware is a bit more complicated.**

SOUND, VIDEO, ACTION

What should you look for in a display card? For starters, don't be satisfied with the VGA emulation provided by the Amiga chip set, particularly if you already have a VGA or multisync monitor. Most computer stores sell no-frills VGA cards virtually for pocket change. Two-megabyte cards allow very high resolution, nearly true-color displays like 1024x768 in 64,000 colors, but the average card these days contain 512K or 1MB. Avoid expensive video-acceleration hardware, though. Your video speed is limited strictly by the ISA bus and you simply won't see a performance boost.

After a good video display, a sound card is another must-have. The PC community has finally agreed that the SoundBlaster (by Creative Labs) is a pseudo-standard, and there are a million cheap clones out there. One advantage to purchasing a true SoundBlaster card is that no SoundBlaster-emulation device drivers have to be loaded into memory, so you get extra base memory for the added cost of the real McCoy. Sound cards are the only expansion product ►

I've had trouble getting to work in an emulator environment, so be especially sure to keep the receipt.

Expansion space is always at a premium, particularly in a cramped A3000 or A4000. Rather than installing separate cards for sound and video, think about getting a multifunction board. GMR Productions (distributor of the Golden Gate emulators) sells a combination S-VGA, SoundBlaster-compatible, joystick port and SCSI interface on a card, all in a package that includes a double-speed CD-ROM drive. Computer stores like CompUSA are also littered with similar devices.

Speaking of CD-ROM, it is taking the PC world by storm. If you have a fast emulator, there's no reason why you can't jump on the CD-ROM multimedia bandwagon. Shopping around a bit may make a big difference. Single-speed (150K/s) CD drives are fast becoming known as half-speed drives; the standard has clearly become double speed. I would hesitate to even consider a triple- or quad-speed drive, though, as no existing emulator is fast enough for you to see any benefit from that extra investment.

Not all CD-ROM drive interfaces are the same, either. There are SCSI, IDE, and proprietary CD-ROM solutions on the market, and the packaging rarely tells all (few PC consumers are knowledgeable enough about SCSI to care). It really is in your best interest to get a true SCSI device, and here's why: You can use the same CD-ROM drive with both your Amiga and emulator or PC! Simply rig an A/B switchbox to the PC SCSI card and the Amiga SCSI interface. You can use the CD-ROM on the Amiga, reboot, and then use it on the PC (never switch sides while the computer is powered on). GMR Productions sells a complete SCSI switching package, or you can call a supply company like Redmond Cable and engineer it yourself.

A Big Bounce

Okay, now you've done it! You've created a 5MB animation on your PC that you simply must get to an Amiga. No wait, you've rendered a 3MB IFF on the Amiga that you need to place in a PC application. Either way, the file in question won't fit on a floppy disk. Can you make the switch, or is all hope lost?

Luckily, there is more than one way to skin this cat (my apologies to the cat). Very likely, the easiest solution is to mail the file to yourself. If both computers are in the same room, attach a null modem cable to their serial ports and transfer the file via the telecommunications software of your choice. (You can pick up a null modem cable at Radio Shack or any similar electronics store.) If the computers are too far apart for that to work, use a modem to upload the file to a BBS and download it using the other computer. You can even e-mail a file to yourself on a service such as CompuServe.

If the telecommunications route is out, you will have to get a little more creative. I know of two other ways to transfer files between the PC and Amiga, and one comes with every copy of ADPro. ADPro ships with MS-DOS, Windows, Amiga, and Macintosh versions of Splitz and Joinz, two utilities designed to break a Husky-size file up into Chihuahua-size bits that will fit on a series of standard floppies. All the Splitz and Joinz programs are cross-compatible, which means you can create a graphic on an Amiga, split it up and rejoin it on a PC, and then repeat the process to install it on a Mac as well.

If you have a SyQuest drive attached to both the Amiga and PC, the PC won't be able to read your Amiga filesystem but you can use CrossDOS to write in PC-ese from the Amiga. Be sure, when installing CrossDOS, to select the option for a real MS-DOS drive, and not a PC partition on an AmigaDOS device. Finally, some Amiga unarchivers can handle zipped MS-DOS files, like gzip, found on Fish disk 838.

—DJ

Multimedia Via PC

It's no secret that any Amiga can run graphical rings around a stock PC, but lately, some of the most exciting new software is being released for the PC. If you want to run these programs, you should configure your emulator or PC to meet multimedia specifications. The MPC standard establishes a minimum combination of assets such as the RAM, video display, and hard-disk space needed to run modern multimedia applications like CD-ROMs and games. Microsoft's encyclopedia, Encarta, and Virgin's spooky puzzle game, The 7th Guest, are examples of software designed specifically for MPC. There are two variations of MPC: MPC 1 and the newer MPC 2. The former is a fairly liberal guideline, designed for 1992-vintage computers. If you own at least a 386-based emulator, you can easily build a system that is MPC compliant.

Some key requirements for an MPC system are:

Requirements	MPC Level 1	MPC Level 2
Hard Disk	30MB	160MB
CD ROM	150K/s (single speed)	300K/s (double speed)
Sound	8 bit	16 bit
RAM	2MB	4MB
Video	640x480, 16 colors	640x480, 65,000 colors
Ports	MIDI/Joystick	MIDI/Joystick

Though only 16 colors are necessary for MPC Level 1, it turns out that most programs need 256 colors. If you can assemble these requirements, have no fear about taking home a box which requires MPC. When MPC 2 applications begin to appear, they'll need a level of performance that existing emulators simply cannot deliver. If you're a true PC power user, eventually you'll have to get a real PC (or wait for emulators that use the PCI slots in some future Amiga).

Stay in the Loop

Last but not least, it sometimes helps to have an ongoing dialog with other Amiga owners who also use emulators or PCs. *Amiga Crossings* is a resource for cross-computing in both the PC and Macintosh domains. At $48/year, this monthly newsletter is an invaluable way to keep up on news, questions about emulation problems, and others' experiences. ■

Dave Johnson is author of the book ***The Desktop Studio: Multimedia With the Amiga****. He works extensively with both PCs and Amigas, and writes for several computer publications. Contact him c/o* ***AmigaWorld*** *Editorial, 80 Elm St., Peterborough, NH 03458.*

Head 2 Head

Comparative Evaluations
of Popular Amiga Programs

IMAGE PROCESSING

ADPro vs. Imagemaster vs. ImageFX

By Brent Malnack



AMIGA IMAGE PROCESSORS have more effects up their disk sleeves than Campbell's has soups. From subtle, utilitarian functions to wild effects, these programs enhance your graphics and expand your image collection. ASDG's Art Department Professional, Black Belt Systems' Imagemaster R/t, and GVP's ImageFX are the top contenders in this market. Each one offers such image-processing basics as cropping, scaling, resizing, rotating, and format translation. They share many effects, too: Each can make a photo look like an oil painting or an embossing, for instance. Further, all three can create truecolor images for output to disk—and display them on Amigas equipped with 24-bit devices.

The three differ, though, in terms of price, features, approach, quality, and more. This article will point out some of those differences in the hopes of helping you choose the best image processor for your needs.

Art Department Professional

The most popular of the three programs is probably ASDG's Art Department Professional (ADPro). ADPro earned its large following of graphic artists not only by being one of the first image processors on the Amiga, but also by offering great features. The program has undergone alterations over the years both in terms of looks and power, with the current release (version 2.5) featuring the most dramatic changes in its history. ADPro's menus are now configurable, so you can include your favorite loaders, savers, image operators, and commands. Image and screen information are also listed on the same List Interface with the configurable menus.

ADPro 2.5 has a huge manual, all 529 pages of it printed in small (10-point) type (the table of contents alone is 27 pages!). The manual begins with a few basic functions, then launches into 40 pages of tutorials cov- ►

PHOTOGRAPH BY ED JUDICE

ering everything from file-format translation to automated JPEG archiving. Every program feature is documented in exhaustive detail. If you look carefully, you can find pearls of wisdom along the way, gaining insight into pixel versus print aspect ratio, Floyd-Steinberg versus ordered dithering, and other topics.

Memory requirements for ADPro are directly related to the operations and images you use. The program runs fairly well with video-resolution images on an 8MB system.

Special Effects

Operating the program is simple. You load an image, choose an effect or "operator," and display or save the result. This simplicity, evident throughout ADPro, makes the work fast and easy. Unfortunately, though, this benefit is somewhat offset by the lack of an Undo feature. Therefore, when you get a result you like, it is best to save the image before proceeding.

ADPro can use many different display modes. Owners of non-AGA Amigas are limited to a 16-color display in high resolution, or HAM modes for lower resolution images. With the AGA Amigas (A1200 and A4000), you can display images in up to 256,000 colors. ADPro also supports such third-party display cards as the Retina (Noahji's), Harlequin (Amiga Centre Scotland/Haitex), IV24 (GVP), and OpalVision (Centaur). And while it doesn't control Picasso II (Expert Services) directly, ADPro can save images to be displayed in full-resolution, 24-bit color on this board as well.

ADPro is the only one of these programs to offer direct support for NewTek's Video Toaster. The program can read and write Toaster Framestore format, and with its ability to access the board's framebuffer directly, ADPro has an edge over both Imagemaster R/t and ImageFX for use with the Toaster.

Less and More

Want to set up automatic processing for multiple images? There are a few ways you can do it with ADPro. You can use the included FRED (FRame EDitor) utility, which the manual describes as "a visually oriented list manager." FRED can call a series of individual frames and process them as a sequence; it can also call special image drivers within ADPro to perform animation effects on a series of frames. Like FRED, Multi-Frame (MacroSystemUS) is an icon-based batch processor. ARexx, now part of the Amiga's operating system (versions 2.0 and later) provides another means for batch processing, although using one of the icon-based programs makes it easier to set up multiple frame segments.

ADPro is also one of the few tools that allows for color reduction, a function essential in preparing artwork for broadcast and 3-D rendering. (Color reduction lets you do clean-up work in paint programs with fewer colors, making clean-up easier.) Having 16 or fewer colors is necessary when working with auto-tracing software such as Pixel 3D Professional (Axiom).

ADPro also differs from the other two products in that it does not incorporate paint and morphing programs. ASDG does manufacture MorphPlus ($295), however, which works directly with ADPro (the vector-

ADPro 2.5
ASDG
$299

Serial-number copy protected.

Minimum system: 4MB RAM, Workbench 2.04, hard drive.

Recommended system: 2MB chip RAM, 8–10MB fast RAM, Workbench 2.04 or later, accelerated processor.

Imagemaster R/t
Black Belt Systems
$99.95

Not copy protected.

Minimum system: 1MB chip RAM, 4MB fast RAM, Workbench 2.04, 10MB hard-drive space.

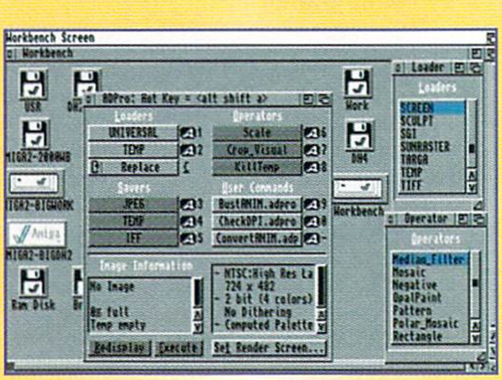
Recommended system: 2MB chip RAM, 8MB or more fast RAM, accelerated processor, floating-point unit.

ImageFX
GVP
$299

Not copy protected.

Minimum system: 3MB RAM, Workbench 1.3, two floppy drives.

Recommended system: 1MB chip RAM, 10MB fast RAM, hard drive, accelerated processor.



In its latest incarnation (2.5), ADPro now sports configurable menus—allowing you to include all your favorite loaders, savers, operators, and commands. Also, image and screen info can be listed with these menus.

based program is the most flexible morphing solution on the market). And while ADPro supports many image formats out of the box, to get the full range of ADPro's image-translation capability, you must purchase additional conversion modules. The Professional Conversion Module ($90), is necessary, for instance, if you want to convert TIFF, Targa, Sun, SGI, and other formats. You can add scanner support to ADPro, too, with other software. ASDG makes excellent scanner drivers for the Epson 600C/800C ($200), for example, and one for the HP ScanJet IIC ($200). All these add-on programs have the benefit of working from within ADPro, so you can perform ADPro functions without jumping from program to program.

Imagemaster R/t

Although Imagemaster is extremely powerful, it is aimed at the general Amiga graphics community. Its price-tools ratio is unmatched; in fact, with all of Imagemaster's effects, it is hard to imagine ever having time to try everything. Besides all of the basic image processing functions, Black Belt System's Imagemaster R/t ($99.95) offers a number of other features, including full-fledged paint and morphing programs.

Distinctions

Working with images in Imagemaster is a bit more complex than in ADPro. This is largely due to the unconventional terminology it uses and the number of steps it sometimes requires to perform a function.

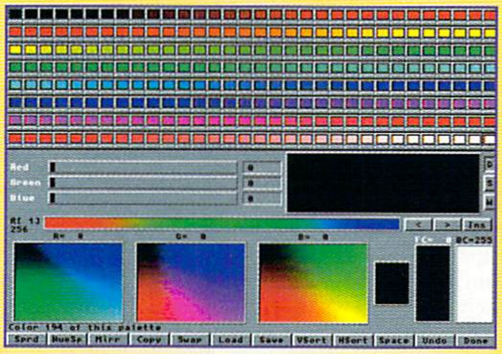
These things heighten the learning curve, which is stiffened further by the lack of a printed manual—a unique feature of Imagemaster. Instead of the more traditional manual, all of Imagemaster's documentation is in the form of online help. As the mouse pointer moves over any button in the interface, text appears describing the button's purpose. By pressing the Help key, you summon to the screen details on how to use the button along with some occasional tips and tricks. This online access is great to have and would be appreciated in many other Amiga applications. It is, however, no replacement for a printed manual, and having to learn the program this way can take much time and effort.

Imagemaster enjoys another distinction in being one of the most frequently upgraded Amiga products, as well. This keeps the program current, but keeping up with modifications can be challenging; it seems there is a new version every week.

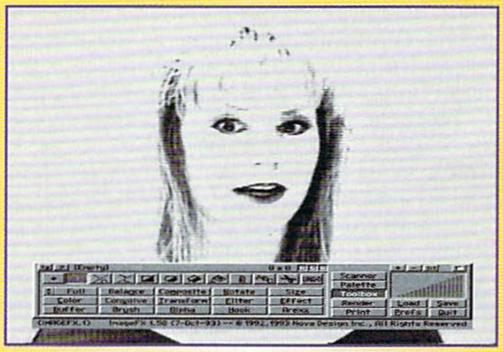
In Use

Imagemaster's capabilities are quite impressive. Compositing multiple images can be performed better here than with any other Amiga software, as the program gives you complete control over edge transparency and blend. The paint program is also very capable, although the steps and terms can sometimes prove overwhelming.

Imagemaster was the first Amiga program to offer morphing, and using it to produce both still and moving morphs is easy. It uses a point-to-point morphing method, in which you match a control point on ►



Imagemaster R/t includes a very capable paint program, as well as offering a large collection of image-processing tools.



ImageFX enables you to apply a wide range of effects through the use of special user-defined brush tools.

one image to a conrol point on another.

Imagemaster's effects are best suited for processing single images as opposed to animations. Batch processing is possible, but the effects themselves are not easily animated over time.

Imagemaster includes an Undo buffer, which you can disable at any time to greatly reduce the amount of RAM necessary. This brings up a fundamental difference in the way that Imagemaster operates. All image buffers are stored at all times, until they are deleted, so multiple images, clips of images, and brushes are online simultaneously. This makes the program extremely flexible, but it means the system requirements tend to be higher for Imagemaster than ADPro.

ImageFX

GVP's entry in the image-processing market, ImageFX, in some ways fits between the other packages in price, ambition, and performance.

Like Imagemaster, ImageFX contains a paint program that is 24-bit internally and utilizes a variety of display options. You can output images directly to a number of display devices, including Black Belt Systems' HAM-E, DMI's Resolver, Impulse's Firecracker-24, or GVP's own IV24. ImageFX's paint software is more sophisticated than that of Imagemaster's, however, and it is much easier to use.

On the other hand, a charcoal drawing effect (described in the Tips section of the manual) is a four-step process using ImageFX, while it is simply a push of a button in ADPro.

Tool For Tool

GVP claims that ImageFX's features far outweigh those of ADPro when price is considered. This claim is true in that ImageFX includes morphing software, scanner drivers, and high-end image translators (for TIFF, GIF, and Targa) that ASDG charges extra for. This doesn't mean, however, that ImageFX's tools are necessarily as good as those from ASDG.

Case in point: ImageFX morphing software is a mesh-based morphing system. Under this system, you use a grid with control points on it to set up the corresponding morph subjects. Although this approach is both easy to learn and fast, it is inherently limiting and depends on the way a morph is performed. There is a limit to the distance that an object can travel during a morph: The nature of the mesh prevents the points in the grid from moving over neighboring points and columns. Thus, you cannot morph a bird in the upper-left part of the screen into a dog in the lower-right part of the screen. This may not present a problem for you at all, as the morphing process always looks more natural when the objects involved don't move too much. By contrast, though, ASDG's and Black Belt's morphing systems have no such limitations.

Best for Batching

ImageFX is the best batch processor of the three for novice users. The program can easily process image sequences with a number of effects. For example, it can apply an oil-paint effect to each frame of an animation. Unfortunately, not all of the effects are available in this manner, so an ARexx script might be necessary. Also, there are currently no products that perform icon-based batch processing for ImageFX.

ImageFX is also the only one of these programs to have built-in virtual-memory support. This enables you to use your hard drive as though it was part of your system RAM. Virtual memory is much slower than real RAM, so any time the system needs to access virtual memory, things slow down enormously. However, it is a useful option as it can mean the difference between being able to load a very high-resolution image and not.

Quick and Documented

ImageFX performs its tasks quickly. Loading and saving different format images was the fastest of the three.

GVP provides ample, well-written documentation for ImageFX in the form of a 210-page manual. The manual does not describe how to use the paint software, but instead describes the paint-tools collection. ImageFX's painting tools—including freehand draw, flood fill, airbrush, text, and undo—are the same as you would find in any paint program. The program makes a distinction between the brush and pen tools, though: A brush is a user-defined 24-bit drawing implement cut out from an image, while a pen is a one-color, standard drawing implement that uses one of the tools. Effects can be applied to brushes, but not to tools.

Summary

Black Belt has been committed to keep Imagemaster upgraded and bug free. Without question, the program is a great value, although its steep learning curve may prohibit the general Amiga user from becoming very proficient with it. Thankfully, a three-volume training tape set ($49.95) clears up a lot of mysteries. With the tapes, Imagemaster becomes a reasonable choice for basic paint/image-processing functions. Power users may reconsider Imagemaster, as well, knowing that this source now exists.

ASDG has been the heavyweight in the market with ADPro, and has some of the most powerful features available in any of the packages. This comes at the highest price of the three ($299), though this figure is not unfair considering its powerful features. ADPro's add-on products are well supported and well documented.

The newcomer, ImageFX has been gaining momentum in the market with a fast, easy-to-use interface and decent documentation. The lack of any real human technical support is frustrating and needs to be considered. All of GVP's telephone technical support has been shifted to an electronic voice-mail system. (The company also accepts faxes and e-mail.) The big problem is that you cannot call and instantly reach a human. Users who do not have a 24-bit or AGA paint program may find that ImageFX offers the best of both worlds. ■

Brent Malnack writes for Amiga and video magazines. Formerly a NewTek product manager, he co-founded Positron Publishing, a book- and software-publishing company. Write to him c/o Positron at 1915 N. 121st St., Suite D, Omaha, NE 68154.

Bravo the Encore!

Making Use Of Scala's New MM300



We can only surmise that the developers of Scala had opera in mind when they devised the program that has become the *de facto* standard in multimedia-presentation software. After all, opera is the original "multimedia" concept. (Two 16th-century Italian dudes, Peri and Caccini, had the revolutionary idea of combining music and drama into one brand-new, multidimensional art form.) And what more gloriously successful presentation venue to choose as a name than Milan's famed opera house, La Scala?

The folks at Scala knew what they were doing, and that goes for the operation of the program, as well. Remember the first time you used the original Scala? After about 20 minutes, you were effortlessly creating a slideshow by tying together graphics, audio, and text. Scala worked according to a simple system, easily learned in that first sitting. Since then, Scala has grown into a program that, while still simple, allows a great deal more device control, interactivity, and graphics manipulation—a mountain of features lies just beneath the surface. This article will introduce you to some time-saving techniques for using the power of Scala MM300.

The new Scala takes advantage of the Amiga's Advanced Graphics Architecture (AGA) found in the A1200 and A4000. The program now requires 1MB of chip RAM and 2MB of fast RAM, which means that if you have a stock A1200 (with a total of only 2MB), you must sacrifice the expansion slot to upgrade memory. Scala recommends that A1200 owners choose a card that is also an accelerator (a wise decision anyway), which comes in handy now that MM300 has some image-processing capabilities.

EX Marks the Spot

In Scala terminology, presentations are called scripts, and from the Scala main menu, a script appears as a list of events called pages. Each page may contain a variety of elements. On nearly every page, you will define elements such as background, wipe, and pause. ►

The opening-night reviews are in, and Scala MM300 has already drawn raves from the multimedia cognoscenti. Let's put the new version through its paces and see how it can help you in your presentation work.

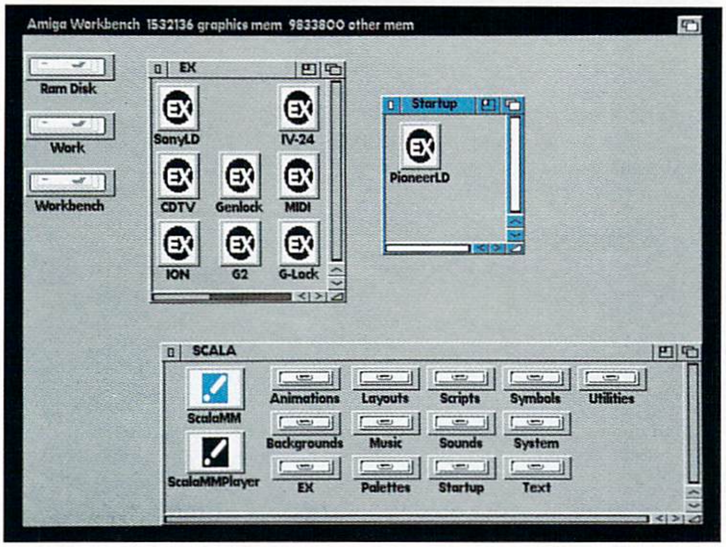
By Mike Levin

ILLUSTRATED BY AMY WASSERMAN

You may also play sound, define a variable, execute a command, or control some external device. These elements are referred to as EXs (pronounced "ee-ex's"), and each one has its own column on the list.

By moving files between two drawers, you may add new EX columns to control devices such as laserdiscs and genlocks. The files are stored in the EX drawer and become active when you move them into the Startup drawer. You'll find both drawers in the Scala directory. When the program is run, there will be a column for each EX. For instance, moving the PioneerLD EX into the Startup drawer creates a new column named PioneerLD, from which you could issue commands to control a laserdisc player.

When you run Scala, the EXs may not all be visible



EXs, the building blocks of a Scala script, can perform many tasks. For instance, you can have EXs shuffle external devices in and out of scripts by simply clicking and dragging.

because they will run off the right-hand side of the screen. To rearrange the order of the EXs, first select the System button at the lower-right of the main menu. This takes you into the System menu, where you'll find the User Interface button at the upper left. Clicking the tiny left or right arrows on this button switches the list of user-interface options into a list of available EXs. You can now rearrange their order. If you wish to keep this order indefinitely, click on Save Configuration. When you hit OK to go back to the main menu, the EXs will be in the new order.

You can then change the width of an EX column by carefully positioning your pointer between two columns on the main menu, clicking, and moving the vertical yellow bar that appears. This enables you to fit more columns on the screen or to see more units of measurement in the pause column.

First Things First

Before you begin a Scala presentation, decide where you are going to keep your files. If you plan on creating new pictures and sounds with outside programs, make a new drawer and put everything you create into it. When you create new files, use a logical naming system with file extensions. To make a custom button in the Scala file requester for this new directory, find the directory through a Scala file requester, and then hold down the Shift key and press one of the blank buttons on the right. Now press OK on the new requester that appears. You can later use Scala's Copy to Drawer function to make a new drawer containing only those files used in the script.

Once you run Scala, the first thing to do is select New and then the background for your first page. You can preview backgrounds before making your selection by using the Show button. You may also select multiple backgrounds simultaneously for a series of pages by holding down the Shift key during selection, or you can hit the All button to select every file in the directory. This is convenient for making instant slideshows; each background becomes a page in the script.

If you wish to apply the same pause to every page in the script, select the first pause in the list (make sure you're at the top), select the desired delay, then the To End button, and finally hit OK. You can type in pause and other numbers directly without having to use the arrow buttons, but if you do use these buttons, try holding down the Shift key for increased counting speed.

Work Closely With Your "Editor"

When you are making a series of pages that have the same background but are overlaid with different type, set the first page up as a template. While still in the editor, press the F3 key to make a new page that contains all your type-style information. Press F9 to toggle the text boxes on and off. This lets you see the already existing lines. If you want to make a copy of your current page, including all the type, press F4.

Pressing the List button is another way of viewing the information typed onto the screen. You can rearrange the lines to set the order for line transitions. When you set a Text Out wipe on a line, a second line is added to the list so that you can control when the wipe will occur. You may also use the list to enter type, especially for text crawls when the text has to run wider than the screen. To recover a cursor, double-click the line or press the number to the left of the line. Also, if you have accidentally added a lot of needless lines from the editor, you can easily delete them from the list. Then press OK to return to the editor.

If you'd like to create beveled boxes for text display, draw a rectangle with the rectangle tool. Then press the right arrow on the 3D attribute button to change it into a Bevel attribute button, which you then press to activate the bevel. By pressing the Layout button, you can increase the bevel size to whatever dimension you wish. The bevel option works, however, only on rectangles.

In MM300, you can click and drag items to move them in the editor. If you wish to move several items at once, surround them with the marquee (dotted-line box). You do this by clicking and dragging, beginning outside the objects you wish to enclose. All objects contained within the box or touched by the box will move as one. Any attributes you apply—such as font style and wipes—will be applied to all items in the marquee.

Sometimes when you move items around in the editor, however, objects don't get properly redrawn. When this happens, hit the F10 key to force Scala to redraw the screen.

A word of caution before we move on: Something mentioned in the manual that you should not do is create a blank page by clicking New and OK from the

main menu. If you do so, you risk being unable to return to edit this screen later on. You should also not load and save from MM300 any MM200 scripts that use blank screens. Instead, use a supplied Scala background or create a blank page in DeluxePaint (Electronic Arts). If you find yourself stuck in this situation, however, you can work around it by downloading from CompuServe or Portal the archive called ScalaFixers.LHA, a set of ARexx programs that will both remove occurrences of blank screens and cause MM300 scripts to revert back to MM200 form.

Wipes and Resolutions

An important matter to consider when making a Scala script is the number of colors you plan to use. The general rule is to stick with 16-color, 640x400 screens. This is easy to do because all the Scala backgrounds, as well as the alternative collection of color palettes, are in 16 colors. On AGA machines (A1200s and 4000s), wipes occur smoothly and reliably with 16-color screens.

During wipes, you may notice that Scala often fades the color palette of one image into that of the next, thus eliminating the need to display both palettes on the screen at once. But with images of 128 colors or fewer, the correct color palettes of two images are displayed simultaneously when using wipes such as Center and Curtain. Other transitions such as Cube and Rollon will still use color fades.

Many transitions in Scala offer a number of variations. For instance, if you don't want a color fade to occur on wipes such as Rollon (above), press C (for clearpage) when you are in the Wipe menu. Also, try using the numberpad to change the direction of a fade from north to south, or try the s key for softfade and the d key for damped.

If a wipe appears choppy, experiment with other speeds. If you can't get acceptable performance from a wipe, choose another one, or reduce the number of colors in your background by selecting Load Other Resolution. Once you've reduced the colors, save the new background to your hard drive.

When wiping between 16-color images, you may choose Scala's most impressive transition, Superimpose, in which one image fades directly into another. On pre-AGA machines, Superimpose works only between four-color hi-res screens or eight-color lo-res screens.

When setting line wipes, try to avoid transitions that are painfully long. The idea is to make it look good and to help guide the audience—never make them wait. One method of speeding up transitions is to apply a line transition to several lines by using the desired wipe on the first line, and then the Link wipe on those that follow. The resulting wipe, which looks like a chain link on the Wipe menu, will occur as if all the linked lines were one object.

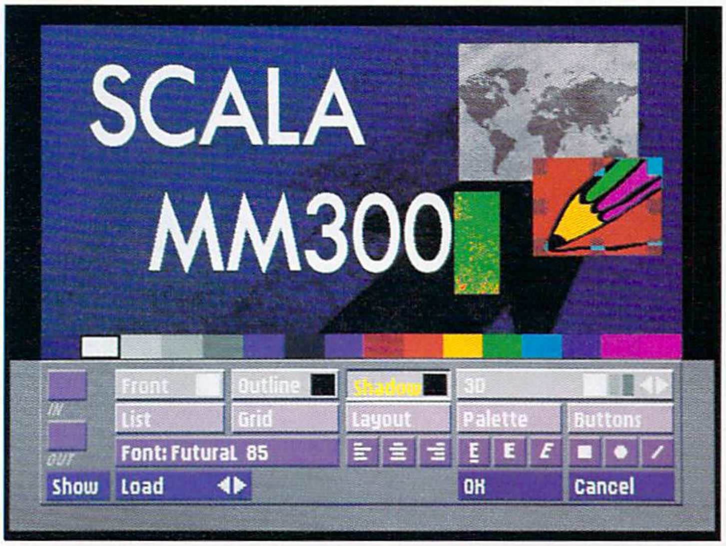
Remapped and Resized Graphics

You can now also load 24-bit files directly into MM300 as backgrounds or brushes. Scala will reduce the image to 256-color format and do fast Floyd-Steinberg (F-S) dithering. If you have multiple color brushes on the screen, with palettes different from that of the background, you can choose—via the Optimize button under the Palette menu—a new palette that best accommodates all the brushes and the background.

Once you have made such adjustments, the best thing to do is to save the adjusted background and brushes back to your hard drive as new files. Otherwise, each time Scala shows that page, it will have to recalculate all the color and size adjustments, resulting in a noticeable delay. Clicking the tiny arrows on the Load button from the Scala editor changes it into a Save button, with which you can save the individual elements. When you do this, Scala will ask if you'd like to replace the old file with the new one in the script. Answer yes. The resulting script should have no unusual delays.

Explore the Possibilities

Scala has come a long way since its early days as a video titler. This article has not even approached the interactive, ARexx, and variable features of the pro-



Scala MM300's editor provides a wide array of features to help you create and orchestrate your multimedia presentations.

gram. For instance, if you are a brave soul wishing to venture into the possibilities posed by ARexx, try saving one of your Scala scripts with an .AREXX extension. This will actually save the Scala script in ARexx format! You will not be able to load it back into Scala, but you can run it from a shell via the rx command while Scala is running.

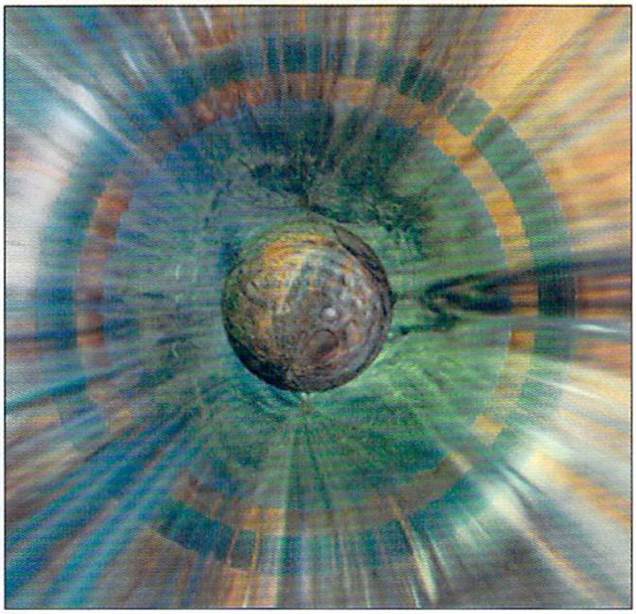
Scala is one of those rare applications that define an entire category of computer programs. But unlike word processors or desktop-publishing packages that can run equally well on various hardware platforms, Scala takes advantage of the Amiga's unique video, multitasking, and ARexx capabilities—making it a program difficult to match on other platforms. With InfoChannel, the high-end version of Scala, you can even provide automated distribution of Scala scripts over the telephone to unlimited numbers of InfoChannel player units—opening up myriad video-publishing possibilities.

All in all, Scala MM300 presents a richly caparisoned multimedia stage, peopled both with impressive, full-voiced leading features and a capable chorus of supporting elements that carry their spears well. ■

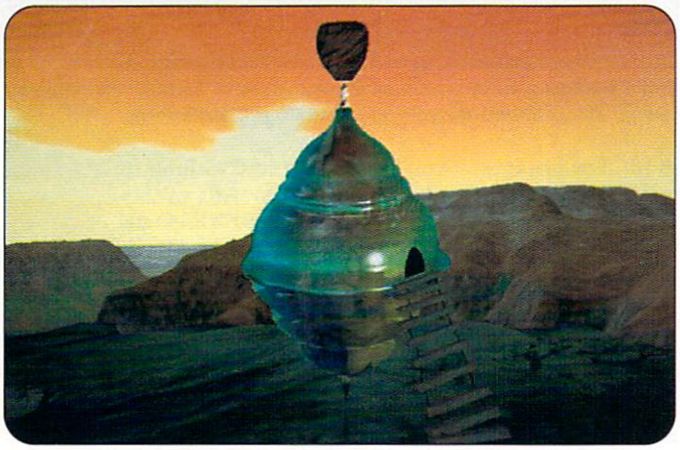
*Mike Levin is a graphic designer for Scala Studios, a division of Scala Inc. that offers multimedia-production services. Write to him c/o **AmigaWorld** or at Scala Inc., 2323 Horse Pen Rd., Herndon, VA 22071-3405.*

DIGITAL CANVAS

Need a reprieve from the worries of the world? Rest your eyes here—on the works of Amiga artists, whose vision and artistry can calm, inspire, and entertain.



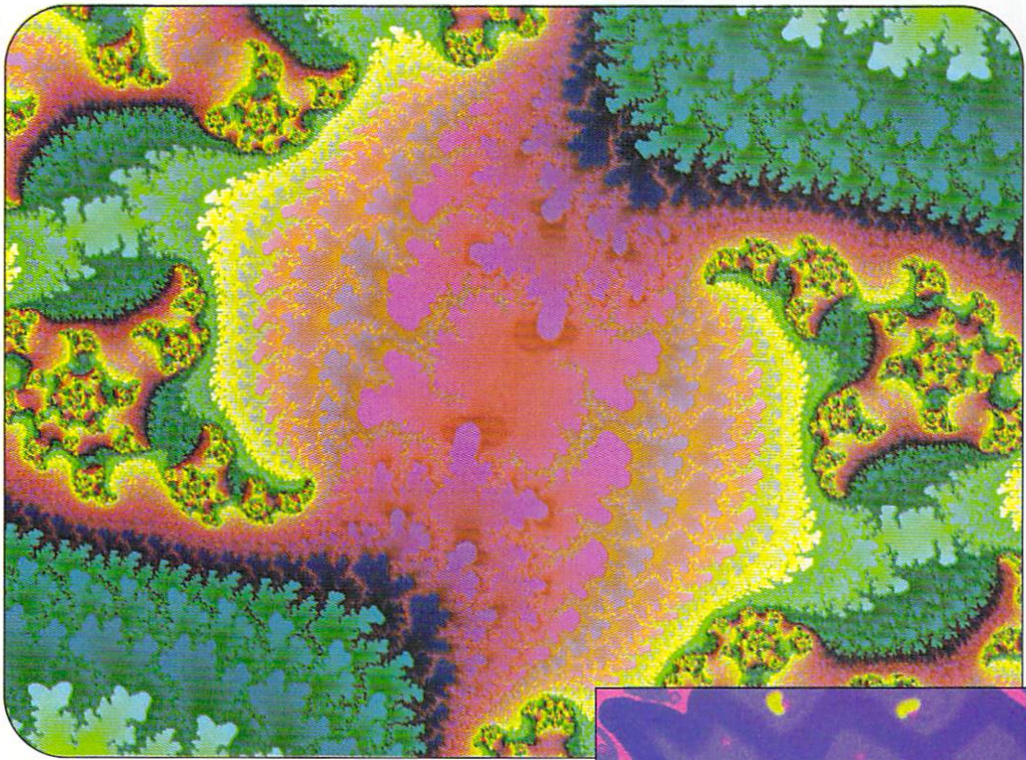
PHIL WOLSTENHOLME of Sheffield, England, has produced beautiful images that have graced the pages of *AmigaWorld* in the past (most recently in our May issue, p. 24). Since then, Phil has not been resting on his polygons. Instead, he's been collaborating on a 40-minute animation called ***Motion*** for Warp Records, the UK's leading independent electronic/dance music label. The image above is just one frame of the fantastic video. The project had Phil working for more than six months with Imagine (Impulse) on a single '040-based Amiga 2000.



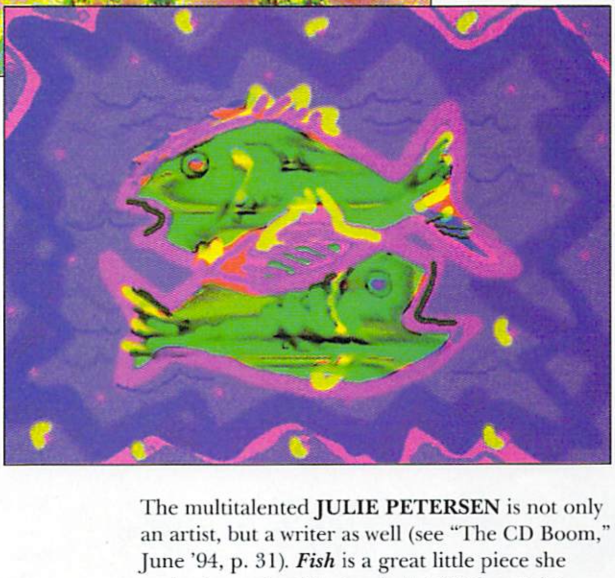
ROBERT S. BOYD, JR. lives in Seekonk, Massachusetts—just a short distance from the sea. The artist launched ***Top Ship*** from his new Amiga 4000 using a whole fleet of software, including Impulse's Turbo Silver, Virtual Reality Labs' Vista Pro 2.0, and Digital Creations' DCTV Paint.



DIGITAL CANVAS



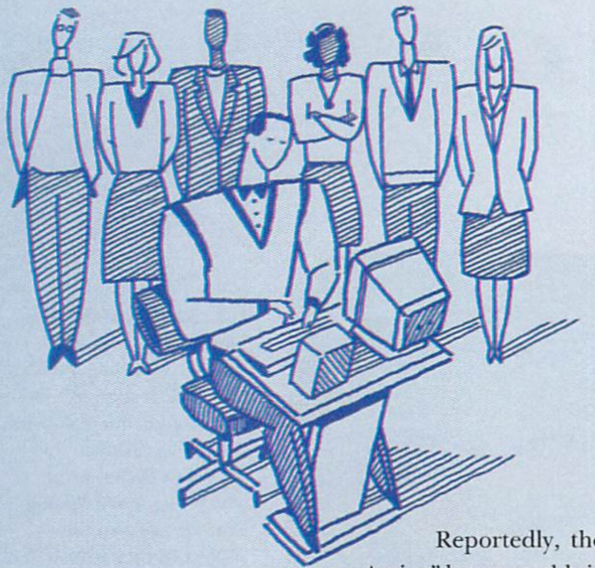
D.L. RICHARDSON, a long-time Amiga aficionado, used MegageM's Fractal Pro software and his Fargo Primera dye-sub printer to produce this gorgeous fractal print, which he named ***Spunk.*** Fractals are also the subject of Richardson's entertaining instructional videotape, "Animation 202: Fractal Freedom," from Myraid Visual Adventures.



The multitalented **JULIE PETERSEN** is not only an artist, but a writer as well (see "The CD Boom," June '94, p. 31). ***Fish*** is a great little piece she worked up using Electronic Arts' DeluxePaint.



We should have held a contest to guess the name of the animation this still was taken from. Would you have suspected ***Sexual Disarray Among Nonsecular Buddhist Monks?*** It's the work of Los Angeles-based 3-D animator/video editor **YARON ZOHAR**, who uses an accelerated, Toaster-equipped A2000. Zohar also called on Impulse's Imagine, ASDG's ADPro, and Axiom's Pixel 3D for this piece.



Club

Reportedly, the first Amiga users' group was formed in California. Now, "Club Amiga" boasts worldwide membership (this directory lists about 100 groups in the US alone!) so you're likely to find one near you. "Members only" benefits include on-site software demos, workshops, newletters, and so on. So, what are you waiting for? Join the club! *(Please send additions and corrections to AUG Listing, c/o* AmigaWorld *Editorial, 80 Elm St., Peterborough, NH 03458.)*

Want to mingle with fellow users, get some advice, find some great bargains, or just have some fun? Amiga users' groups are for you.

COMPILED BY
ANN RECORD

Alabama

HACKS
PO Box 14356
Huntsville, AL 35815

Arizona

Amiga Arizona
PO Box 82371
Phoenix, AZ 85071

Amiga Users Group of Yavapai County
1465 Coyote Rd.
Prescott, AZ 86303

Catalina Commodore Computer Club
PO Box 32548
Tucson, AZ 85751

Metro Amiga Computer Resource (MACRO)
PO Box 11681
Phoenix, AZ 86303

California

A Bakersfield Area Commodore Users Society (ABACUS)
PO Box 40334
Bakersfield, CA 93384

Amiga Friends User Group
PO Box 4186
Huntington Beach, CA 92605

Amiga Users Group of Long Beach
PO Box 228
Long Beach, CA 90801

Greater Riverside Amiga Users Group
PO Box 15
Riverside, CA 92502

HUB Area Commodore Club
PO Box 398
Camptonville, CA 95922

Los Angeles Amiga Users Group
PO Box 947
Culver City, CA 90232

Northern California Amiga Club
13912 Dusty Oak Trail
Bella Vista, CA 96008

Original Amiga Users Group
6435 Hillegass Ave.
Oakland, CA 94618

Sacramento Amiga Computer Club
PO Box 19784
Sacramento, CA 95819

Silicon Valley Video Toaster Personal Video Production Users Group
2427 Hart Ave.
Santa Clara, CA 95050

3D Art Forum
1341 Ocean Ave. #349
Santa Monica, CA 90401

Valley Computer Club
PO Box 310
Denair, CA 95316

Ventura County Amiga Users Group and Video Forum
8842 Tacoma St.
Ventura, CA 93004

Video Toaster Group
4842 Via Colina
Los Angeles, CA 90024

Colorado

Commodore Club of Colorado Springs
PO Box 25851
Colorado Springs, CO 80936

Rocky Mountain Amiga Users Group
PO Box 280403
Lakewood, CO 80228

Connecticut

Fairfield County Amiga Users Group
18 Great Plain Rd.
Suite #131
Danbury, CT 06810

Hartford Amiga Users Group
4 Bristol St.
Wethersfield, CT 06109

Delaware

First State Commodore Users Group
PO Box 1313
Dover, DE 19903

Florida

Miami Amiga Users Group
PO Box 16
Miami, FL 33116

ILLUSTRATED BY RAYMOND MEDICI

Amiga



MICE
11110 Bird Rd.
Miami, FL 33165

Safe Hex International
PO Box 724
Port Richey, FL 34673

Sarasota Manatee Amiga Users' Group
PO Box 36057
Sarasota, FL 32433

Suncoast Amiga Club
PO Box 1311
Largo, FL 34649

Suncoast Commodore Club
1351 Gulf Blvd. #216
Clearwater, FL 34630

GEORGIA

Amiga Atlanta, Inc.
PO Box 49103
Atlanta, GA 30359

Amiga Users Klub
3529 Edgewood Rd.
Columbus, GA 31907

River Rates User Group
152-F Lamkin Rd.
Harlem, GA 30814

IDAHO

Boise Area Commodore Users Group
3213 North Kelly Way
Boise, ID 83704

ILLINOIS

Amiga Computer Enthusiasts
359 Miami St.
Park Forest, IL 60466

Champaign-Urbana Commodore Users Group
PO Box 716
Champaign, IL 61824

Commodore Club of Rockford
PO Box 10022
Rockford, IL 61131

Fox Valley Commodore User Group
PO Box 28
North Aurora, IL 60542

Knox Commodore Club
PO Box 494
Galesburg, IL 61402

McHenry County CCC
117 Wagner Dr.
Cary, IL 60013

Niles Amiga Resource Committee
Niles Public Library Computer Lab
6960 Oakton St.
Niles, IL 60714

Shawnee Amiga User Group
PO Box 865
Carbondale, IL 62903

Western Illinois Programmers' User Group
E.L. Mills
RR 5, Box 75
Quincy, IL 62301

IOWA

Commo-Hawk Commodore Users Group
PO Box 2724
Cedar Rapids, IA 52406

COUGAR
PO Box 2302
Ames, IA 50010

LOUISIANA

Amiga Group of the New Orleans Commodore Klub (NOCK)
PO Box 8307
Metairie, LA 70011

New Orleans Commodore Klub
PO Box 8307
Metairie, LA 70011

MARYLAND

Annapolis Commodore Users Group
110 Lake View Dr.
Annapolis, MD 21403

Hagerstown Users Group
1136 Sunnyside Dr.
Hagerstown, MD 21742

MASSACHUSETTS

Amiga Computer Club
22 Happy Way
E. Harwich, MA 02645

Amiga Users of Southeastern Massachusetts
PO Box 50856
New Bedford, MA 02745

MICHIGAN

Ford Amiga Computer Club
24381 Pennie
Dearborn Hts., MI 48125

Lansing Area Commodore Club
PO Box 1065
East Lansing, MI 48826

Midland Computer Club
PO Box 132
Midland, MI 48640

MINNESOTA

Amiga of Minnesota Interest Groups Alliance
PO Box 32374
Fridley, MN 55432

MCUA
5027 Vera Cruz Ave. N.
Crystal, MN 55429

MISSOURI

Amiga Users Group of Kansas City
9014 Central
Kansas City, MO 64114 ►



Gateway Amiga Club
PO Box 811
Bridgeton, MO 63044

NEBRASKA

Amiga Users of the Heartland
PO Box 1432 DTS
Omaha, NE 68101

McCook Commodore User Group
1006 W. Second St.
McCook, NE 69001

NEW JERSEY

Garden State Commodore Users Group
89 Stratford Rd.
Tinton Falls, NJ 07724

Oakland Amiga Club
650 Ramapo Valley Rd.
Oakland, NJ 07436

NEW MEXICO

New Mexico Amiga Users Society
PO Box 91556
Albuquerque, NM 87199

NEW YORK

Amicus Hudson Valley
PO Box 590
Hyde Park, NY 12538

AMUSE
151 First Ave., #182
New York, NY 10003

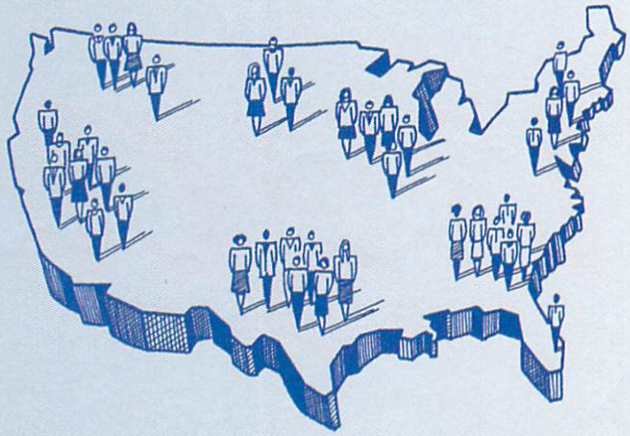
CLIC
PO Box 692
Westbury, NY 11590

D'BUG of BUG
PO Box 523
New York, NY 10475

International MIDI Users Group
PO Box 615
Yonkers, NY 10703

Kids Computer
c/o Trocco
Science Department
St. Hilda/St. Hugh's
619 W. 114 St.
New York, NY 10025

Queens Commodore Users Group
PO Box 129
New York, NY 11417



OHIO

AFIT Gazette
PO Box 4114
Dayton, OH 45401

Basic Bits Commodore Club
PO Box 447
Ridgeville, OH 44039

CEBUG
PO Box 1461
Sandusky, OH 44870

Cleveland Area Amiga Users Group
19443 N. Sagamore
Fairview Park, OH 44126

Ohio Valley Amiga Users Group
PO Box 428539
Cincinnati, OH 45252

OKLAHOMA

Tulsa Amiga Group
PO Box 702323
Tulsa, OK 74170

OREGON

ACCUG
PO Box 1124
Corvallis, OR 97339

Medford Interest Group Amiga, #00146
PO Box 4034
Medford, OR 97501

Northwest Amiga Group
Galleria Suite 553
921 S.W. Morrison St.
Portland, OR 97205

PENNSYLVANIA

Capital Area Commodore Club
PO Box 309
Grantville, PA 17028

Philadelphia Amiga Users Group
PO Box 8296
Philadelphia, PA 19101

Lackawanna CCUC
PO Box 14
Taylor, PA 18517

LCCUG
PO Box 14
Clark's Summit, PA 18411

Lower Bucks User Group
PO Box 397
Croydon, PA 19021

North Coast Commodore Users Group
PO Box 6117
Erie, PA 16512

Pennsylvania Amiga Computer Club
PO Box 1442
Mechanicsburg, PA 17055

Philadelphia Amiga Users Group
PO Box 8296
Philadelphia, PA 19101

Pittsburgh Commodore Group
PO Box 16126
Pittsburgh, PA 15242

Scranton Commodore Users Group
PO Box 244
Scranton, PA 18501

TENNESSEE

Memphis Amiga Group
PO Box 752683
Memphis, TN 38175

Memphis Commodore Users Group
PO Box 34095
Memphis, TN 38134

TEXAS

Commodore Houston Users Group
PO Box 441252
Houston, TX 77244

Concho Valley Computer Users Group
PO Box 2661
San Angelo, TX 76902

Metroplex Commodore Computer Club
PO Box 813
Bedford, TX 76095

UTAH

Amiga Users Society Members
PO Box 57804
Salt Lake City, UT 84157

VIRGINIA

ALFA (Amigold Life Forms Association)
PO Box 2893
Newport News, VA 23609

National Capital Amiga Users Group
PO Box 12360
Arlington, VA 22209

Northern Virginia Commodore & CACE
9206 Annhurst St.
Fairfax, VA 22031

WASHINGTON

Tri-City Commodore Computer Club
PO Box 224
Richland, WA 99352

WISCONSIN

Milwaukee Area Commodore Enthusiasts
PO Box 26216
Milwaukee, WI 53226 ■

ARexx: Electronic Ginsu

Part One

It slices. It dices. The amazing ARexx does it all. Our two-part series demonstrates, through descriptions and examples, that this versatile language can deliver a million-and-one customized cuts.



"QUICK, DEFINE AREXX!" If you shouted this into a crowd at an Amiga users' group meeting, you'd likely get several different answers. Some people would shout back "ARexx is a programming language!" Others may respond, "It's a command-macro language." Still others will call out "an interprocess communications language," which is a fancy way of saying it allows one program to talk to another. Actually, ARexx is all of these. Like the Ginsu knife you see advertised on late-night television, the language can do just about anything. But while ARexx's rich, complex nature makes it hard to define in a few words, it also makes ARexx a powerful tool that can enhance almost any computerized task.

Just what can ARexx do? And how much effort will you need to invest learning it? In this article and the one that follows, we'll explore the various facets of ARexx and answer those questions. This month we'll concentrate on ARexx as a programming language; in the next issue, we'll focus on its command-macro and communications aspects.

What, Me Program?

Learning to program your computer, if only a little, can be very rewarding. The problem with ready-made applications is that they never seem to do exactly what you need. Programming allows you to tailor operations to suit your exact needs. While you are figuring out how to get a particular job done, you'll also be sharpening your computer skills. Also, programming is fun. There is a certain satisfaction in bending the computer to your will that you just don't get from video games.

Unfortunately, most people don't consider the joys of programming because they assume it is too difficult to learn. But ARexx is much easier to use than most other computer languages. Like Basic, ARexx is an interpreted language, which means you can execute the program as soon as you write it. You don't have to process it through a compiler and linker as you do with C.

Also, ARexx does not make strong distinctions between types of data as other languages do. You don't have to declare variables (symbolic names that can store different values) before you use them. You can assign the number 450 to a variable called Score and then assign the word "twenty" to the same variable. ARexx takes care of a lot of the detail work for you. The interpreter allocates memory as needed, and frees it up when it's not needed.

ARexx includes extensive debugging features that help you find your programming mistakes quickly. Because ARexx is related to the REXX programming language used with IBM operating systems (such as OS/2), much of what you learn about ARexx carries over to these systems. Best of all, Workbench versions 2.0 and later include ARexx. (ARexx is also available separately for $49.95 from ***Wishful Thinking***.)

Despite its emphasis on simplicity, however, ARexx remains a powerful language, capable of very complex tasks. It includes all the features you would expect from a complete programming language; variable expressions, loops, conditionals, and function calls. You need not master all of these concepts to start programming in ARexx, however. You can start doing useful work after learning just a few simple commands. Let's take a look at some ARexx programs.

First Steps

The traditional first program is one that prints out the words "Hello, world." The ARexx version looks like this

```
/* Our first program */

SAY "Hello, world."
```

►

By Sheldon Leemon

Notice that the program starts with a comment, enclosed by the characters /* and */. You can use this space to make a note about the program or not, but every ARexx program must start with a comment line. This tells the interpreter that it is an ARexx program. The next line does the real work of the program. The Say command prints out the message enclosed in parentheses.

There are three steps to creating and running this program. First, use a text editor to type in the two lines of text, and save the file with the name "REXX:Hello.rexx" (the REXX: assignment defaults to S:, which is the S directory of your Workbench disk). The Workbench includes two text editors, Ed and MEmacs. You will find an icon for MEmacs in the Tools drawer, but you must run Ed from a shell or via the Execute Command menu on the Workbench, using a command such as "Ed REXX:Hello.Rexx." I prefer using Ed because I can run it in a window on the Workbench, above the Shell window I use to test the program. You can also use a word-processing program to create ARexx program files, but if you do, be sure to save your script as text only because most word processors embed print-formatting codes into the text that will confuse the ARexx interpreter. Also, remember to press Enter at the end of each line; you can't have multiple statements on one program line unless you separate them with the semicolon character.

Second, make sure ARexx is running. You start the ARexx interpreter by running the RexxMast program in the System drawer. If you drag this program into the WBStartup drawer, ARexx will always be available when you start your computer. The third step is to type the command "RX Hello" either in a shell window, or in the requester provided by the Execute Command Workbench menu. You don't have to type the .rexx ending of the filename. The RX program will assume it's there unless you have specified otherwise. If all goes well, the words "Hello, world" will print out in your command window.

More Power

The real power of the computer is that it can do things over and over again. You don't have to enter the Say command ten times to make your program print your message ten times. A loop, starting with the word "Do," performs the same set of instructions many times.

```
/* Loop.rexx */
DO FOR 10
   SAY "Hello, World"
END
```

When you run this program, it prints the message ten times. What if you don't want to print the same message each time, however? You can use a programming symbol called a variable to change the message.

```
/* Varloop.rexx */
DO pass=1 TO 10
   SAY "This is pass number "pass
END
```

Here, a variable called "pass" stores the loop number. This form of the Do command sets the value of "pass" to 1 on the first time thorough, then increases its value by one each subsequent run through the loop. Since we don't include the name of the variable in the Say string (the text in quotations), Say prints out the value of the variable, instead of the word "pass." When you run the program, it prints "This is pass number 1," "This is pass number 2," and so on.

Another way to make your program more flexible is using conditional commands that allow it to react differently under various circumstances. Let's say, for example, that you want your program to use ordinal numbers (first, second, third, etc.) to tell what loop it is on. For the numbers 4–10, you could just add "th" to the number, but for the first three, you'd need a different ending. Using the If statement, you can make the ending different for different numbers:

```
/* Condloop.rexx */
DO pass=1 TO 10
   ending = 'th'
   IF pass==1 THEN ending='st'
   IF pass==2 THEN ending='nd'
   IF pass==3 THEN ending='rd'
   SAY 'This is the' pass || ending 'time through the loop'
END
```

The double equal sign (==) is a comparison operator that checks to see whether the value of pass is 1, 2, or 3. If it is, we use a single equal sign to assign a new text value to the variable "ending." Then, in the Say line, we put the sentence together, using the concatenation operator (two vertical bars) to combine the contents of the pass and ending variables into one word.

Select is another type of conditional command you could use for this job:

Figure A.

	Last	Change	LastCl	High	Low	Ask	Bid	Volume	Update
T	50	50	50	⅜	50			642500	10:59E
BMY	51⅛	+½	50⅝	51⅜	51			279500	10:59E
DIS	41⅝	41⅝	41¾	41⅜				317500	10:59E
MO	49¼	+⅛	49⅛	49½	49⅛			455000	10:58E
TWX	38⅜	+⅛	38¼	38½	38			208400	10:59E
PEP	36¾	+⅛	36⅝	36¾	36⅝			89700	10:58E
CL	56⅛	–⅛	56¼	56¼	55⅞			51000	10:56E
IBM	52⅞	+⅜	52½	52⅞	52¼			406000	10:59E
AAPL	32½	–1	33½	33½	32½	33	32½	268500	10:59E
CBU	⅞		⅞					0	00:00E

Enter list number:

```
/* Selectloop.rexx */
DO pass=1 TO 10
   SELECT
      WHEN pass==1 THEN ending='st'
      WHEN pass==2 THEN ending='nd'
      WHEN pass==3 THEN ending='rd'
      OTHERWISE ending = 'th'
   END /* end of SELECT block */
   SAY 'This is the' pass || ending 'time through the loop'
END /* end of DO loop */
```

This version is a couple of lines longer, but it is easier to follow because of the indents. All commands within the Do loop are indented to the same level; commands in the Select block are indented to another level.

A-Parsing We Will Go

ARexx has a relatively small number of core commands, but one of them, Parse, makes it very easy to manipulate text. That's why I like to use ARexx to convert the information contained in a text file to a format I can use more easily. For example, I use the National Videotex Network information service to receive price information about a group of stocks. When the information comes through my modem, it looks like what you see in Figure A (opposite).

I'd like to store some of this information in a database, but I really only need the first two items of information, the ticker symbol that identifies the stock, and the last price. It would also be nice to format the information so that I could import it directly into my database. The usual format is one line per record, with each bit of information enclosed in quotations and separated with a comma. Sounds like a big job, doesn't it? But with ARexx, I can write a simple program—fewer than 20 lines—that does it (see Listing 1, this page).

To use this program, you must supply the name of a source file and a destination file on the command line. The command "RX Stocks ram:raw_info ram:stock_info" takes the information from the file "ram:raw_info" (captured with a modem) and saves the part we want in the file "ram:stock_info." The first command, Parse Arg, gets the names of the files, and puts them into the variables "source" and "dest" that are used to open the files. Then comes the main processing loop, which we repeat until the end of the file (EOF). First, we read a line of text (Readln) into the variable "buffer." Then we use the Parse Var command to extract the information we need. Since the information lines up nicely in columns, we tell Parse to put characters 1–7 in the variable called "ticker," 8–11 in the variable "price," and 12–16 in the "fraction" variable.

Next, we must eliminate the lines that don't have price information, and deal with prices where there is a fraction but no whole number. We use an IF statement to set "price" to zero if it contains blanks, and set price to a text value for the line that contains the heading (with the word "Last"). At this point, it's easy to tell which lines we want to process. If the price variable contains a number value (a Datatype of "N"), we process the line. We use Interpret to convert fractions—1/8, for instance—to a decimal (.125), and add this to the price. We use Compress to strip the trailing spaces from the stock ticker symbol, and we're ready to write the line (Writeln) to the destination file. The last two lines, which close the open files, are not really necessary because an ARexx program closes all open files when it finishes.

Listing 1

```
/* Stocks.rexx — A program to filter stock quote files */

PARSE ARG source dest . /* get source and dest file names */
source_error=OPEN('infile',source,'Read') /* open source file */
dest_error=OPEN('outfile',dest,'Write') /* open dest file */

DO WHILE ~EOF('infile') /* process the source file to the end */

   buffer=READLN('infile') /* read a line */
   PARSE VAR buffer ticker 8 price 12 fraction 17 . /*extract info*/
   IF (price=='    ') THEN price = 0 /* if price is blank, 0*/
   IF ( ABBREV(fraction,'Last') ) THEN price = 'Last' /*skip text line*/
   IF (datatype(price,'N')) | (price=='    ') THEN DO /* if not a number, skip */
      INTERPRET 'last = 'fraction||'+price' /* convert fraction to decimal */
      ticker = COMPRESS(ticker) /* remove blank spaces */
      WRITELN('outfile' , " "ticker" "||','||" "last" ") /*print answer */
   END /*end of processing line */
END /* end of processing file */
CLOSE('infile') /* close source file */
CLOSE('outfile') /* close dest file */
```

But Wait, There's More . . .

For even more power, you can extend ARexx in a number of ways. You can write a series of useful functions in ARexx, for example, and save them in a file called REXX:Functions. Then, you can call them from other programs with a command such as

```
CALL REXX:Functions/Myfunction
```

Another way to add commands to ARexx is with libraries. These are Amiga-style system files, usually written in C, that contain additional functions. Once you use the Addlib command to add a library, you can use all of its functions as if they were part of the ARexx language. There are lots of freely distributable ARexx libraries available on bulletin boards, the ***Fred Fish*** disks, and on information-service forums. They add everything from control over the serial port, to Amiga graphics commands, to transcendental math functions. There are also commercial offerings, including **REXX Rainbow** ($48) from ***Dineen Edwards Group***.

The most interesting way to extend the power of ARexx, however, is to have your program communicate with another program. One such program that can communicate with ARexx is AmigaDOS. You can include any AmigaDOS command in an ARexx program, using the command Address Command to specify that you want to talk to AmigaDOS. For example, to make a new directory called RAM:Test, you'd use the command

```
ADDRESS COMMAND 'makedir ram:test'
```

That has potential. But the real fun starts when you begin "talking to" applications programs such as your word processor, spreadsheet, database, desktop-publishing program, or image-processing software. Next month, we'll take the programming concepts we've explored here one step further, and examine the subject of programming other programs. ■

Sheldon Leemon, a computer/video consultant and instructor, is the author of two books and scores of articles covering the Amiga. He also serves as Amiga Forum Manager on National Videotex Network. Write to him c/o ***AmigaWorld,*** *Editorial Dept., 80 Elm St., Peterborough, NH 03458.*

CREATIVE COMPUTERS TOTAL BLOWOUT

CREATIVE™ COMPUTERS

Creative Computers Color Monitor Model AD-1970

NEW!



Designed from the ground up to be an Amiga Monitor!

- 14" Phillips tube
- .28mm dot pitch
- Full OverScanning (no black borders)
- Supports all new modes (including Super 72)

2-YEAR PARTS WARRANTY

$499.95 — 5718

Introducing the MediaVision CDR-MV2 CD-ROM Drive*



*NEC® CDR-25 Mechanism

- SCSI-based drive
- No caddy required!
- Single-speed operation
- Comes with cable, SCSI terminator and power supply
- One-year warranty

$89.95 — 4771

The Media Vision CDR-MV2 also works as a audio CD player, so you can listen to music while you work.

Titles available w/purchase of CD-ROM only:

ASIM CD-ROM Driver O.E.M. Version	$26.95	5712
Gold Fish Double CD-ROM	$14.95	5709
Texture Heaven CD-ROM	$14.95	5317

Amiga CD³²



5540

32-Bit power, CD-based games for incredible capacity.

LIMITED SUPPLY

$374.95

CD-32 GAMES

5703	TOTAL CARNAGE CD32	32.95
5702	BRUTAL SPORTS FOOTBALL CD32	32.95
5671	LABYRINTH OF TIME CD32	28.95
5706	THE CHAOS ENGINE CD32	32.95
5667	MICROCOSM CD32	54.95
5649	D/GENERATION CD32	28.95
5647	CASTLES 2 CD32	31.95
5646	SEEK AND DESTROY CD32	28.95
5635	SENSIBLE SOCCER CD32	32.95
5633	PIRATES GOLD CD32	34.95
5371	PINBALL FANTASIES CD32	35.95
5370	ROBOCOD CD32	33.95

CD-32 FMV CD-VIDEOS JUST $22.95 EACH!

HOT!

5590	STAR TREK VI
5591	PATRIOT GAMES
5592	TOP GUN
5593	INDECENT PROPOSAL
5594	BLACK RAIN
5595	BRYAN ADAMS (MUSIC)
5596	CREAM OF ERIC CLAPTON
5597	ANDREW LLOYD WEBBER

BONUS!! Buy anything from Creative Computers and you can purchase AMIBACK 2.0 – great drive back-up utility software for only $14.95 (OEM Version) While supply lasts — 5621

GOLD DISK Clearance

The largest Amiga software developer is having a Spring Clearance. Gold Disk is commited to supporting its products and will continue to offer first class support for its thousands of users!



Pro Draw 3.03

Feature rich drawing program for the Amiga at the lowest price ever! Complete version, not the OEM version!

List $199 — $69 — 4248

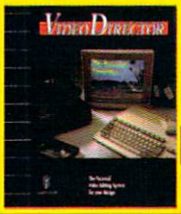


Pro Page 4.1

Highly popular page layout program for the Amiga at the lowest price ever! Complete version, not the OEM version!

List $295 — $69 — 4957

— Limited Time Offers, Subject to Change... SO HURRY! —



VideoDirector

Video editing system with hardware to control most camcorders and VCRs. Catalog and edit your best video moments!

WAS $139 — $79 — 3699

Transwrite 2.0 Affordable word processing	$19.95	#2442
Desktop Budget - Manage finances	$14.95	#0226
PAGESETTER 3 - AGA COMPATIBLE DTP	$29.95	#4590

Pro Calc 2.0

Powerful spreadsheet for the Amiga with extensive features. Full version! LOWEST EVER!

$69 — 5021

ORDER HOTLINE 800-872-8882

Canada 800-548-2512
Order Hours: Mon. - Fri 7am to 6pm Sat. 8am to 5pm (PST)

Order Status 310-787-4520
Mon. - Fri 8am to 6pm
Sat. 8am to 5pm

Creative Computers has been the leading Amiga reseller since 1985. We're more committed than ever to support your computer of choice! While the immediate future of Commodore is uncertain, you can count on Creative Computers for continuing support and service for all your Amiga products. We're clearing out our excess inventory to make room for new products and passing the savings on to you!

ACC 0891 CABLE A500 A2000 6FT MODEM 2.34
ACC 1032 DESKJET 500 FX-80 EPSON EMULATOR 23.70
ACC 1131 GENDER CHANGER DB25M/DB25M ..... .81
ACC 1545 STAR NX2410 RIBBON 1.98
ACC 1618 COVER UPS KEYBOARD A2000 A3000 PLASTIC 1.05
ACC 1622 COVER UPS A500 CPU 2.10
ACC 1695 CITIZEN RIBBON BLACK 3.98
ACC 2064 CABLE AMIGA R G B SYNC D23F/4 BNC 35.97
ACC 2391 CABLE VGA EXTEN 6 FT H15P/H15S 15.99
ACC 2393 CABLE FLICKER FIXER ZENITH
NEC IIA 2FT DB9M-HD15F 8.00
ACC 2395 CABLE AMIGA A1084SD 1080/2002
ANALOG 6' DB23F/DB9F 11.99
ACC 2396 CABLE A500 PARALLEL PRINTER 6FT D25M/C36M 2.60
ACC 2567 GENDER CHANGER DB25S FEMALE TO FEMALE 1.75
ACC 2610 STAR NX1020 BLACK RIBBON 1.62
ACC 2939 CABLE RGB TERMINATOR 10.90
ACC 3927 CABLE ETHERNET DB15M/DB15F 25" 23.00
ACC 4126 CABLE DCTV TO A1080/2002 ..... 7.50
ACC 4169 3.5"- 5.25" MOUNT KIT CONVERSION -INTERNAL 4.36
ACC 4225 CABLE SCSI 50FH TO CENTRONICS MALE 50 ..... 9.81

MacroSystems U.S.
Under New Distribution
RETINA Z3 $749.95
Fastest Video Card Out There!
5772
VLAB Y/C $424.95
Video Digitizer Card
5110
VLAB MOTION SYSTEM
NEW - Non-linear editing for A2000/A3000/A4000 $1995.95
AVAILABLE LATE JULY 94

ACC 4262 CABLE HD15 PIN MALE TO 15 PIN MALE 6' 11.27
ACC 4311 CABLE AMIGA TO HAYES MODEM
HARDWARE HANDSHAKING 6' 8.95
ACC 4426 GRAVIS AMIGA GAMEPAD 16.95
ACC 4445 TAC-30 JOYSTICK 9.47
ACC 4608 EPSON AP-3250 BLACK RIBBON 5.42
ACC 4712 CABLE A600/A1200 TO 2.5 IDE DRIVE INTERNAL 2.74
ACC 4746 CABLE VGA TO SWITCH BOX 3' 5.45
ACC 4747 CABLE 6 PIN MINI DID MALE/MALE 3' 6.00
ACC 4832 IC PULLER X-TRACTOR 7.58
ACC 4924 COVER UPS A600 CPU PLASTIC DUST COVER 2.10
ACC 4934 TAC-3 JOYSTICK 5.95
ACC 5125 CABLE TRUMPCARD PROF. TO CENTRONICS MALE 10.00
ACC 5168 CABLE DB25M/DB25M 30 FEET 13.50
ACC 5247 CABLE AMIGA TO EPSON SCANNER 14.95
ACC 5301 BAR CODES AND MORE FONT CARTRIDGE HP 66.00
ACC 5330 10' PARALLEL CABLE BELKIN 2.73
ACC 5345 ALPHA DATA 3 BUTTON OPTICAL MOUSE 29.95
ACC 5394 BNC TO RCA ADAPTER 2.29
ACC 5396 MIDI CABLE 6' 2.95
ACC 5532 AMIGA TO MAGNAVOX 1CM135 CABLE 11.99
ACC 5542 PRIMERA PHOTOREALISTIC REFILL KIT 73.01
ACC 5543 PRIMERA PHOTOREALISTIC REFILL KIT 100 PRINTS 209.95
ACC 5570 LX JET SERIES TRANSPARENCIES FILM HP 37.81
ACC 5585 S-VIDEO CABLE TO 1084(S) CHROMA & LUMA RCA 10.95
ACC 5640 APACHE 1 JOYSTICK QUICKSHOT 5.95
ACC 5725 PYTHON 1 JOYSTICK QUICKSHOT 7.95
ACC 5758 BOLLISTICK JOYSTICK 13.07
ACC 5759 SUPERPRO ZIP STICK JOYSTICK 16.34
ACC 5760 ECLIPSE MOUSE 2 BUTTON 12.95
ACC 60918 PAINTJET XL300 B-SIZE TRAY HP 43.00
ACC 6149 ERGO STICK W/ SPEEDBALL II 14.95
ACC 8836 SAFESKIN A3000 / A4000 ..... 4.67
BKS 0927 COMPUTER GAMING WORLD 1.25
BKS 1576 MAPPING THE AMIGA COMPUTE'S 6.50
BKS 2543 IMAGINE: A GUIDED TOUR 9.95
BKS 2868 AMIGA FORMAT 2 DISK MAGAZINE 6.27
BKS 2869 AMIGA FORMAT SPECIAL EDITION NO DISK 2.49
BKS 2964 AMIGA ACTION 2 DISK VERSION 2.75
BKS 3231 ENCHANTED REALMS 2.95
BKS 3232 AMIGA COMPUTING 2 DISK VERSION 5.85
BKS 3381 ACs TECH JOURNAL FOR THE COMMODORE AMIGA 4.95
BKS 3835 THE LUCASFILM AIR COMBAT STRATEGY BOOK 5.70
BKS 3875 AMIGADOS INSIDE AND OUT REVISED ABACUS 7.00
BKS 3930 AMIGA POWER 2 DISKS 2.49
BKS 4213 CU AMIGA 2 DISK MAGAZINE 6.00
BKS 4214 THE ONE FOR AMIGA GAMES 2 DISK MAGAZINE 2.49
BKS 4337 AMIGA NEWS PERIODICAL 0.49
BKS 4458 TOASTER ESSENTIALS 2.0 FOR TOASTER CG 28.01
BKS 4460 TOASTER ESSENTIALS 2.0 ..... 27.24
BKS 4461 TOASTER ESSENTIALS 2.0
PROFESSIONAL TECHNIQUES 27.24
BKS 4975 LIGHTWAVE: ESSENTIALS 2.0 ..... 28.01
BKS 4976 LIGHTWAVE: SURFACES 2.0 ..... 28.79
BKS 4977 LIGHTWAVE: MODELER 2.0 ..... 27.78
BKS 5026 ALPHA VIDEO: VIDEO SIGNALS & THE TOASTER 7.95
BKS 5083 LIGHTWAVE: FLYING LOGOS 2.0 ..... 28.01
BKS 5278 THE ONE MAGAZINE WOC SHOW SPECIAL 1.64
BKS 5668 AMIGA USER INTERNATIONAL W/CD32 TITLES 6.27
BKS 5756 AMIGA CD32 GAMER W/CD-ROM 6.27
BUS 0350 WHO WHAT WHERE WHEN 3.00
BUS 0409 PROF. PAGE TEMPLATES GOLD DISK 10.89
BUS 3102 PROWRITE 3.1 ..... 29.95
BUS 3394 PROFESSIONAL PAGE 2.1 ..... 19.95
BUS 3854 PROFESSIONAL PAGE 3.0 ..... 19.95
BUS 4406 PROWRITE 3.3 ..... 22.95
BUS 4701 PROPER GRAMMAR II 29.95
BUS 5403 FINAL WRITER 99.95
BUS 5484 TYPESMITH 2 ..... 99.95
BUS 5559 FRESH FISH OCTOBER 1993 CDROM 14.95
BUS 5560 FRESH FISH DECEMBER 1993 CDROM 14.95
BUS 5690 PAGESTREAM 2.2 OEM VERSION 65.40
BUS 5728 GARDENING CD-ROM 9.70
BUS 5729 BUSINESS & LEGAL FORMS CD-ROM 17.17
CBM 2630 A2630 25MHZ 882 030 ..... 549.95
CBM 2741 CDTV INTERACTIVE PLAYER DEMO 199.95
CBM 2813 A1000 DRIVE REPLACEMENT 54.50
CBM 3287 POWER SUPPLY A590 117VOLT 42.51
CBM 3506 IC SUPER DENISE 8373 ..... 26.95
CBM 3767 LOTUS EXPRESS SOFTWARE FOR A2286 ..... 9.95
CBM 3836 A2000 HD/1 UPGRADE BUNDLE TO A2000 HD PROF. 9.95
CBM 4046 A500 INTERNAL DISK DRIVE REPLACEMENT CBM 54.50
CBM 4478 SCALA MM200 500/2000/3000 ONLY 39.95
CBM 4726 A3640 68040 ACCELERATOR 795.00
CBM 4865 A4000 KEYBOARD 59.00
CBM 4869 A600 CBM MOUSE 25.07
CBM 4871 A600 KEYBOARD 27.80
CBM 4872 A600 INTERNAL FLOPPY DRIVE 57.77
CBM 4875 A600/A600HD POWER SUPPLY 39.95
CBM 4985 A1200 SUPPLEMENTAL MANUAL SET AS-217 ..... 16.35
CBM 5153 A4091 SCSI-2 CONTROLLER CBM 250.70
CBM 5437 A1208 SCSI NO FPU 0K GVP 79.50
CDTV 2798 MY PAINT CD32 CDTV 4.95
CDTV 3804 64K MEMORY CARD CDTV 39.95
EDU 1832 BARNEY BEAR MET SANTA 3.50



Our huge 85,000 square foot warehouse is designed to get your order out *FAST*!

EDU 3680 FRACTION ACTION 6.00
EDU 4129 AMY'S FUN 2 3 ..... 20.95
EDU 4261 AUDIO GALLERY ENGLISH FOR
SPANISH SPEAKERS 19.95
EDU 4565 INTELLITYPE 1.50
EDU 5039 MAVIS BEACON II 28.34
EDU 5052 MICKEY'S JIGSAW PUZZLE 26.70
EDU 5453 SPACE & ASTRONOMY CD-ROM 11.45
EDU 5602 DECIMAL DUNGEON 6.95
ENT 5590 STAR TREK 6 CD32 FMV AMIGA 22.89
ENT 5591 PATRIOT GAMES CD32 FMV AMIGA 22.89
ENT 5593 INDECENT PROPOSAL CD32 FMV AMIGA 22.89
ENT 5594 BLACK RAIN CD32 FMV AMIGA 22.89
ENT 5595 BRYAN ADAMS
WAKING THE NEIGHBORS CD32 FMV 22.89
ENT 5596 THE CREAM OF ERIC CLAPTON CD32 FMV AMIGA 22.89
ENT 5597 ANDREW LLOYD WEBBER PREMEIRE COLLECTION
AMIGA 22.89
GMS 1842 INDIANAPOLIS 500 ..... 7.00
GMS 2463 CHAOS HINTDISK DUNGEON MASTER II 3.95
GMS 2622 HARD DRIVIN' 2 ..... 5.50
GMS 2842 SWIV - SILKWORM IV 5.00
GMS 2978 TOKI 12.48
GMS 3242 SHADOW SORCERER 13.20
GMS 3693 THROMULUS 8.99
GMS 3710 HEART OF CHINA 10.90
GMS 3791 KNIGHTS OF THE SKY 4.50
GMS 3867 PERFECT GENERAL DATA DISK WWII 19.61
GMS 4407 PUSHOVER 13.95
GMS 4613 PINBALL FANTASIES 24.95
GMS 4723 A-TRAIN AMIGA 7.50
GMS 4998 SLEEPWALKER 14.50
GMS 5001 SENSIBLE SOCCER 11.50
GMS 5156 PSYGNOSIS WALKER 11.50
GMS 5223 ATRAIN AMIGA W/CONSTRUCTION SET 17.95
GMS 5246 INTERNATIONAL GOLF CHAMPIONSHIP AGA 12.00
GMS 5264 NIPPON SAFES INC. 13.50
GMS 5274 AIRBUCKS AGA AMIGA 16.50

OFFER CODE: P461MG14

ORDER HOTLINE 800-872-8882
Canada 800-548-2512
Order Hours:
Mon. - Fri 7am to 6pm
Sat. 8am to 5pm (PST)

Circle 13 on Reader Service card.

WAREHOUSE CLEARANCE!

CREATIVE™ COMPUTERS

USE OUR TOLL-FREE INTERNATIONAL LINES

Australia 0014-800-125-712
Denmark 0434-0297
France 0590-1099
Italy 1678-74086
Japan 0031-11-1351
Netherlands 06-022-8613
Norway 050-12029
Switzerland 046-05-12029
United Kingdom 0800-89-1178

GMS 5286	SIMLIFE AMIGA	16.00
GMS 5304	SOCCER KID	16.00
GMS 5305	ONE STEP BEYOND	10.00
GMS 5306	GLOBAL GLADIATORS	12.50
GMS 5307	ZOOL/NIGEL MANSELL AGA BUNDLE	18.95
GMS 5337	THE BLOB	12.50
GMS 5341	OVERKILL AGA TEAM 17	10.00
GMS 5343	PRIME MOVER	12.50
GMS 5344	HIRED GUNS	19.95
GMS 5346	MEGATWINS	6.00
GMS 5368	DONKS AGA AND NON-AGA	12.50
GMS 5369	LINKS GOLF WITH BOUNTIFUL COUNTRY CLUB	6.24
GMS 5388	DIGGERS AGA	16.00
GMS 5400	ALIEN BREED II AGA	13.50
GMS 5412	PANZA KICK BOXING	5.00
GMS 5413	SILKWORM	5.00
GMS 5415	THEATER OF DEATH	12.50

IOMEGA Makers of Bernoulli — THE BOX 150

Now you can have the reliable mass storage medium used by Hollywood professionals! Used by developers at NewTek, by Amblin Imaging (seaQuest) and Foundation Imaging (Babylon 5). Amiga World says "...the cost and reliability of Iomega Bernoulli drives can't be beat!" Bernoulli means security for your data! THE BOX 150 is an external drive with famous Bernoulli reliability! Each cartridge holds up to 150MB of storage.



HOT! $549.95 EXTERNAL 5147

GMS 5429	BODY BLOWS GALACTIC	13.00
GMS 5469	MICRO MACHINES	12.00
GMS 5474	DISPOSABLE HERO!	12.00
GMS 5480	KRUSTY'S FUN HOUSE	12.00
GMS 5482	BURNING RUBBER	12.50
GMS 5486	USA SCAPES FOR VISTA PRO	17.00
GMS 5488	MORTAL KOMBAT	24.95
GMS 5489	CANNON FODDER	28.98
GMS 5491	F1 RACING	12.00
GMS 5492	BURNING RUBBER AGA	9.95
GMS 5493	TERMINATOR 2	13.00
GMS 5494	ZOOL 2	9.95
GMS 5495	DREAM LANDS BUNDLE	13.00
GMS 5507	JURASSIC PARK INC	13.00
GMS 5514	CHRISTMAS LEMMINGS INC	10.00
GMS 5524	STAR TREK 25TH ANIVERSARY AGA AMIGA	35.95
GMS 5538	STRIKES & SPARES MIRCRPACE	13.00
GMS 5547	GIFTS GALAXY CD ROM VERTICAL	18.53
GMS 5550	SEEK AND DESTROY INC	12.50
GMS 5551	D-GENERATION AGA INC	27.25
GMS 5568	GENESIA	29.43
GMS 5587	LIBERATION/CAPTIVE 2 CD32	33.95
GMS 5599	SCI-FI FANTASY CDROM AMIGA	19.07
GMS 5643	SECOND SAMURAI	29.95
GMS 5669	AWARD WINNERS (ELITE,ZOOL,SEN.SOC.,POOL)4 GAME PK	29.43
GMS 5670	TETRIS/7 COLORS STRATEGY HEAVEN	12.00
GMS 5678	INNOCENT UNTIL CAUGHT	17.00
GMS 5679	PUGGSY	13.00
GMS 5693	LEGACY OF SORASIL	26.16
GMS 5694	APOCALYPSE	26.16
GMS 5701	LEMMINGS & SIM CITY BUNDLE	29.95
GMS 5704	GLOBAL EFFECT	29.43
GMS 5705	TOTAL CARNAGE AGA	29.43
GMS 5711	QUARTERBACK VERSION 6.0	49.95
GMS 5763	THE BLUE & THE GREY	38.14
GPH 0255	MY PAINT 2.0	26.12
GPH 0359	KARA FONTS SUBHEADS	14.00
GPH 0387	DISNEY ANIMATION STUDIO	17.00
GPH 0822	KARA ANIMFONTS 2	11.00
GPH 1837	KARA ANIMFONTS 3	10.00
GPH 2364	DES DISK VINTAGE AIRCRAFT VSCAPE	5.00
GPH 2378	INTROPARTS FLOWCHART SYMBOLS	10.11
GPH 2455	VISTA MARS SCAPES VALLES MARINERIS DATA DISK	9.95
GPH 2948	SOFTCLIPS VOLUME III COLLECTORS	17.00
GPH 3155	KARA TOASTER FONTS VOL I	19.95
GPH 3156	KARA TOASTER FONTS VOL II	19.95
GPH 3203	REAL 3D PROFESSIONAL VERSION 1.4	33.95
GPH 3222	FOUNDATION	39.95
GPH 3512	DELUXE PAINT 4 VIDEO GUIDE	5.50
GPH 3736	MEDIAPHILE PROCESSOR PROGRAM DISK	61.00
GPH 3758	KARA ANIMFONTS 4	13.00
GPH 4021	IMAGEMASTER FOR FIRECRACKER	108.99
GPH 4096	DELUXE PAINT IV V4.1 EUROPEAN	59.95
GPH 4282	KARA TOASTER FONTS VOL. III	19.95
GPH 4283	KARA TOASTER FONTS VOL. IV	19.95

FRED FISH CD'S

The best of public domain and shareware; over 600MB of material. Comes with database program to find specific titles, done by Fred Fish personally.

March/April 1994 Edition CD-ROM	$22.95	5677
Gold Fish 1-1000 uncompressed CD-ROM	$19.95	5709
Frozen Fish 1-1000 BBS-ready CD-ROM	$19.95	5710

CSA "12-GAUGE" 50 MHz

50 Mhz super accelerator with MMU and SCSI. Zero-K RAM. Fast and complete. Optional network coming soon.



$479.95 5144

GPH 4319	PROSCANLAB II	168.20
GPH 4391	CINEMORPH GVP	19.95
GPH 4662	ART EXPRESSIONS SOFT LOGIC	89.95
GPH 4991	VISIONAIRE	33.00
GPH 5067	AMIGA VISION PROFESSIONAL	129.50
GPH 5082	WIPE OUT	15.00
GPH 5089	IMAGE FX SOFTWARE V1.5 UPGRADE	19.95
GPH 5090	JOE'S 1ST COMPANY ORIGINAL COLLECTION	28.95
GPH 5093	JOE'S 1ST COMPANY WEDDING COLLECTION	17.99
GPH 5094	JOE'S 1ST COMPANY FAMILY COLLECTION	17.99
GPH 5113	BRILLIANCE PAINT SOFTWARE	98.09
GPH 5151	CALIGARI BROADCAST 3.0 CALIGARI	125.00
GPH 5214	ADP TOOLS PROFESSIONAL	39.95
GPH 5236	FRACTAL PRO 6.06	43.00
GPH 5255	R PAINT	16.00
GPH 5291	DELUXE PAINT IV V4.5 AGA U.S.	114.95
GPH 5317	TEXTURE HEAVEN CD-ROM ASIM	10.90
GPH 5404	FLIGHT PATH FOR DP IV 4.XX	11.00
GPH 5405	TOO MANY FONTS FOR DP IV 4.XX	17.00
GPH 5483	ANIM WORKSHOP 2 AXIOM	67.95
GPH 5506	WAVEMAKER AXIOM	99.95
GPH 5552	MATHVISION 2.4 SEVEN SEAS	44.00
GPH 5620	MALE & FEMALE OBJECT DESIGN FOR LIGHTWAVE	11.00
GPH 5695	HANNA BARBERA ANIMATION WORKSHOP	44.95
GPH 5697	TRANSITION - IMAGE CONVERSION GIFF,JPEG,IFF,BMP	25.95
GPH 5750	MEDIAPOINT 3.7 UPGRADE DISK	19.95
HRD 1718	GVP SERIES II HC 8/0 A2000 HARDCARD 8MB MAX	64.50
HRD 1723	SCANJET PLUS INTERFAC	144.95
HRD 2037	A501 512KB MEMORY EXP FOR A500	21.80
HRD 2083	FLICKER FIXER PAL	99.95

ORDER HOTLINE 800-872-8882

Canada 800-548-2512
Order Hours: Mon. - Fri 7am to 6pm Sat. 8am to 5pm (PST)

Order Status 310-787-4520
Mon. - Fri 8am to 6pm
Sat. 8am to 5pm

TOTAL BLOWOUT CLEARANCE SALE!

SAVE NOW ON THESE "LAST CHANCE" SUPER BARGAINS. ALL NEW—LIMITED SUPPLY—SO HURRY, CALL NOW!

HRD 2088	A2088D XT BRIDGECARD	19.95
HRD 2183	GVP SERIES II HC8 80MB A2000 HARDCARD 8MB MAX	117.50
HRD 2365	GVP 030 AT AUTOBOOT KIT HARD DRIVE GVP	29.00
HRD 2549	MEGA MIDGET RAM BOARD 4MB	249.95
HRD 2631	GVP SII 600MB CARTRIDGE RICOH OPTICAL RICOH	114.50
HRD 3011	LENS 16MM W/IRIS	9.95
HRD 3348	GVP DIGITAL SOUND SAMPLER	19.50
HRD 3367	DESKJET 500 C COLOR PRINTER	225.00
HRD 3371	PERSONAL TBC II	349.95
HRD 3655	GVP A500 PC286 FOR SII HD8	24.88
HRD 3725	ROCGEN PLUS GENLOCK	179.95
HRD 3733	MEDIAPHILE 2.0P/UG UNIVERSAL TAPE DECK CONTROLLER	74.00
HRD 3848	GVP SII A500 HD8 120	178.50
HRD 3940	PERSONAL VECTORSCOPE	723.75
HRD 4052	DCTV PAL VERSION	175.00
HRD 4094	MEGA MIDGET RACER 20/25 WITH MMU & FPU	249.00
HRD 4150	SUPRA FAX MODEM 2400 / 9600FAX GENERIC	46.56
HRD 4302	LENS 16MM NO IRIS F1.6 W/O	6.50
HRD 4318	SHARP JX-320 SCANNER MUST USE WITH 4320 GPIB INTERFACE	360.62
HRD 4320	GPIB INTERFACE FOR JX-320	79.00
HRD 4338	ROCLITE FLOPPY DRIVE	48.95
HRD 4370	EUREKA MIDI WITH SERIAL PASS THRU MICRO R&D	27.95
HRD 4387	MICROBOTICS VXL30 2MB RAM CARD	98.00
HRD 4405	TOUCHDOWN 100 TAPE BACKUP EXTERNAL DRIVE	249.97
HRD 4431	BASEBOARD 600 0MB WITH CLOCK	13.00
HRD 4529	GVP MAXTOR 120MB W/ G-FORCE MOUNTING KIT	175.00
HRD 4606	EPSON AP-3250 24 PIN PRINTER	169.95
HRD 4607	EPSON AP-3250/2250 TRACTOR FEED	10.95
HRD 4661	GVP SII A500 HD8 80Q	189.95
HRD 4691	EPSON SCANNER TRANSPARENCY OPTION	689.95
HRD 4754	MICROBOTICS MBX1200 W/68882 25MHZ	94.00
HRD 4855	EPSON 600C/800C MAC INTERFACE KIT W/CABLE & FULL PHOTOSHOP	134.50
HRD 4913	TWIN SOUND AMIGA SPEAKERS 5 1/4 "(INTERNAL)	29.00
HRD 4938	ALFA DATA A601 W/1MB & CLOCK/CALANDER	23.95
HRD 5010	EPSON AP-2250 9 PIN PRINTER	119.95
HRD 5058	CLARITY 16 SOUND SAMPLER	84.95
HRD 5066	GVP A1200 SCSI 4MB RAM/33MHZ 68882	179.95



APACHE Joystick
2 fire buttons, biogrip, suction feet
$5.95 — 5640

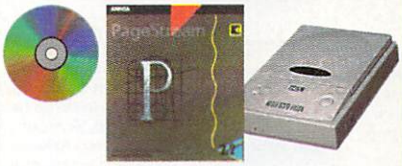
PYTHON Joystick
2 fire buttons, biogrip, suction feet
$7.95 — 5725

HURRY! BOTH IN LIMITED SUPPLY

HRD 5086	M1230XA 33MHZ W/MMU/0K MICROBOTICS	143.00
HRD 5108	VIDEO TOASTER A4000	1924.95
HRD 5112	DKB 1202 W/16MHZ MATH CO W/CLOCK	79.95
HRD 5118	GVP A1200 EXT. 25DB REAR CONNECTOR FOR #5066	22.50
HRD 5138	GVP G-FORCE 68030 40MHZ W/170MB COMBO 4MB RAM	366.00
HRD 5144	CSA 12 GUAGE 50MHZ W/SCSI W/MMU 0K ACCEL	469.95
HRD 5155	DKB A1200 CLOCK	12.95
HRD 5178	FAST LANE Z3 SCSI-2 CONTROLLER ZORRO III	439.95
HRD 5200	CHINON CDS 535 INTERNAL X2 SPIN CD-ROM DRIVE	149.95
HRD 5207	NOVA Y/C BOARD	195.95
HRD 5364	DKB 2632 RAM BOARD 0K NO RAM DKB	99.95

HRD 5380	PRIMERA COLOR PRINTER AMIGA 110V FARGO	689.95
HRD 5398	OXXI AMIGA NET ETHERNET CARD	269.95
HRD 5457	PRIMERA COLOR PRINTER AMIGA 220V FARGO	689.95
HRD 5498	NEC 3XP MULTISPIN CDROM PORTABLE	439.95
HRD 5502	NEC 3XI MULTISPIN INTERNAL CDROM	479.95
HRD 5503	I/O EXTENDER SERIAL KIT 1 EXTRA RS232 PORT GVP	14.95
HRD 5520	ACTION LASER 1500 PRINTER EPSON	589.95
HRD 5674	DKB 1202 W/CLOCK W/O MATH CO	99.95
HRD 8877	SUPRA 2400 BAUD MODEM	24.95
INV 2770	MAGNI 4010 GENLOCK CONTROLLER (ONLY)	149.95
MON 5761	NEW-IDEK MF-8617, .26DPI,17", DIGITAL, HORZ. 23-86KHZ VERT.50-120HZ	779.95
MUS 3375	AUDIOMASTER IV	12.50
MUS 5154	KEYS TO MUSIC VOLUME I	9.95

Super Publishing Bundle!



INCLUDES
- PageStream 2.2 O.E.M Version
- NEC CD-ROM Drive
- ASIM 2.0 O.E.M. driver software
- GoldFish CD
- Super Fonts CD with 1,000 fonts!

GET ALL THIS!
$189.95 — 5770

MUS 5392	BARS AND PIPES POWER TOOL KIT	28.95
MUS 5393	BARS AND PIPES PERFORMANCE TOOLS KIT	16.00
PRI 5541	PRIMERA PHOTOREALISTIC UPGRADE KIT AMIGA	173.90
PRI 60747	DESKJET 550C HP	349.95
PRI 60748	DESKJET PORTABLE HP	179.70
PRI 61936	SHARP JX9600PS LASER PRINTER SHARP	390.00
RAM 1430	1MB X 4 80NS DIPP 0.3 DIPP	18.95
RAM 2220	1MB X 4 80NS ZIPP STATIC COLUMN	19.95
RAM 2221	1MB X 4 80NS ZIPP PAGE MODE	17.95
RAM 2225	256K X 1 100NS DIPP	0.59
RAM 3950	GVP 040 1MB x 8 SIMM	95.00
SRV 0054	IC CIA CHIP 8520A	11.51
SRV 2198	IC GARY CHIP 5719	13.08
SRV 2205	IC PAULA CHIP 8364	28.69
SRV 2207	IC ROM REV 7.0 A2091,2 CHIP ODD/EVEN SET,RUNS 2.04/.1 OS	18.95
SRV 3989	A3000 3 BUTTON MOUSE REPLACEMENT	33.95
SRV 3994	IC RAMSEY	104.64
SRV 4112	A3000 200 WATT POWER SUPPLY W/TRADE IN	69.95
SRV 4265	A3000T POWER SUPPLY	136.25
SRV 4266	A3000T KEYBOARD REPLACEMENT	136.25
SRV 4909	A1200 HARD DRIVE KIT NO ROMS	29.57
SRV 5212	KICKSTART 1.3 ROM	23.98
UTI 5548	SO MUCH SCREENWARE CD ROM VERTICAL	20.16
UTI 5636	DISK EXPANDER	14.00

UTL 1912	X-COPY PROFESSIONAL	16.47
UTL 2118	SCANNERY SCANJET INTERFACE	73.95
UTL 2584	ART DEPARTMENT CONVERSION PAK ASDG	19.95
UTL 3899	DLG PROFESSIONAL BBS V1.0	73.50
UTL 3964	JFORTH PROFESSIONAL 3.0	98.10
UTL 4125	MIGRAPH OCR MULTILINGUAL SOFTWARE	69.95
UTL 4332	CROSS DOS 5.0	29.95
UTL 4558	WACOM AMIGA DRIVER WITH CABLE	74.95
UTL 5078	ASDG HP IIC SCANNER DRIVER	44.95
UTL 5105	QUARTERBACK TOOLS DELUXE	58.85
UTL 5134	MEGA TOOLS	14.95
UTL 5195	CYGNUS ED PROFESSIONAL 3.5	49.95
UTL 5245	DIRECTORY OPUS 4.1	54.49
UTL 5296	EXCELSIOR BBS SOFTWARE	97.49
UTL 5310	MAGIC LANTERN ANIMATION SOFTWARE V1.5 TERRANOVAD	39.95
UTL 9010	AMIGA VISION	12.50
VTP 5736	IMAGE F/X V1.5 TUTORIAL VIDEO	35.95
ZZZ 0364	DR. T's KCS LEVEL II VERSION 3.0	84.38
ZZZ 0501	MIDWINTER	4.95
ZZZ 0557	DISCOVERY TRIVIA 1	4.95
ZZZ 0562	DISCOVERY SPELLING 2	4.24
ZZZ 0565	DISCOVERY LANGUAGE 1	4.49
ZZZ 0601	REAPER DISK COPY	4.49
ZZZ 0680	PALETTE PRINTER	7.49
ZZZ 0716	SYNTHIA PROFESSIONAL	39.94
ZZZ 0952	DISK MANAGER MAC	9.95
ZZZ 1226	LINE FONTS 2	7.87
ZZZ 1451	SPIRIT IN500 0K EXP	39.95
ZZZ 1768	XCAD PROFESSIONAL PAL VERSION	49.95
ZZZ 1795	AE RAMWORKS 2000 2/8	49.94
ZZZ 2460	BUCK ROGERS CLUEBOOK COUNTDOWN DOOMSDAY	3.56
ZZZ 2777	MIG 29 FULCRUM PAL FIGHTER SIMULATION	9.95
ZZZ 2834	EXCELLENCE FRENCH	29.95
ZZZ 2855	AT ONCE 2000 ADAPTER	29.95
ZZZ 3230	AUTOBASIC	19.94
ZZZ 4451	CELLPRO	14.95
ZZZ 4836	HAM-E SYSTEM	49.95
ZZZ 4838	IV-24	549.95
ZZZ 4841	PERFECT VISION	9.95
ZZZ 4842	MIMETICS FRAMEBUFFER REFURBISHED	49.94
ZZZ 7000	CLIP ART #6	4.74

ARCADE BLOWOUT



Hired Guns	$19.95	5344
Zool/Nigel Mansell AGA Bundle	$18.95	5307
Sensible Soccer	$18.95	5001
SpeedBall 2	$9.95	2585
Burning Rubber	$18.95	5492

OFFER CODE: P461MG14

ORDER HOTLINE 800-872-8882

Canada 800-548-2512
Order Hours:
Mon. - Fri 7am to 6pm
Sat. 8am to 5pm (PST)

Circle 13 on Reader Service card.

GVP BLOWOUT!
LOWEST PRICES OF THE YEAR!

CREATIVE COMPUTERS™

SEE LAST PAGE FOR ORDERING INFORMATION

VISA · MasterCard · American Express · Discover

GVP A1230 Turbo+ SERIES II — HOT!



NEW! The next generation of the A1230Turbo+. 40-MHz 68030, real-time clock, 4MB RAM expandable to 32MB RAM. Makes your A1200 faster than a A3000! Exclusive Kickstart Remapping.

ONE YEAR WARRANTY

$409.95 5534

50MHz w/MMU AND 4MB RAM $559.95* 5535

*Free A1291 SCSI Kit with purchase. A1291 Supplied by GVP.

A1291 SCSI KIT..$89 5536

GVP G-LOCK



Bring live video, audio and Amiga graphics together on ANY Amiga! Built-in transcorder to convert input video to composite, Y/C, RGB or YUV outputs! Full AGA support!

$298.95 4526

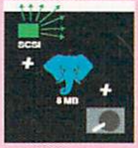
GVP I/O Extender



Expand your horizons with the I/O Extender! Contained on a single card, you will find an additional paralalel port PLUS one high speed FIFO buffered serial port! Coming soon: optional RS-422 or second serial port!

$112 4394

GVP 4008 SCSI
works with A2000!



NEW! Bring the world of SCSI into reach! Hook-up to CD-ROM, Bernoulli drives, etc. Add up to 7 devices to your Amiga and smile! You can even add up to 8MB RAM and mount a 3.5" drive on card!

$139.95 5283

GVP Image FX v1.5
with FREE Tutorial Video!



Complete painting tools, real-time WYSIWYG preview, alpha channel, regionalized processing, edge feathering, brushes RGB masking, and more!

$219.95 5777

DSS8+ DIGITAL SOUND STUDIO



Very quiet digital sound sampler. Includes versatile DIGITAL SOUND STUDIO software, a multifaceted program for sampling, editing, song composition, stereo sound playback and .MOD format song file creation.

$73.95 5127

GVP TBCPlus



5359 **$624.95**

Professional quality, all digital time base corrector with real-time frame grabber and 16.7 million color frame buffer PLU programmable video special effects!

Comb Filter Option ... $89.95 5562
Clean up composite for Y/C out;fix cross color

Frame RAM Option $189.95 5563
1 MB extra Frame RAM; improve special effects

GVP A4000 G-FORCE 040

WITH 4MB RAM! Now you can accelerate your Amiga 4000 and expand the RAM in one product! The GVP G-FORCE 040 is 40-MHz, and will expand to 32 MB RAM on board. PLUS: You can add an optional SCSI II and/or RAM Adapter Board.

NO ZORRO SLOT TAKEN!

Compatible with A3000, Newtek Video Toaster, Centaur OpalVision, GVP EGS Spectrum, MacroSystemsUS Retina, and Picasso II

Now available! **$1499** 5660

GVP A4000 G-Force 040 40MHz/16 MB ... $2199.95 5733
SCSI II Option .... $189.95 NEW

PHONEPAK™ VFX 2.0
A complete voice mail system for your Amiga!

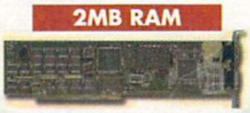
If you would like to have automated, scheduled, time/date stamped voice mail and faxes with unlimited mail boxes, the ability to fax from any program that prints, call in remotely, and more get PHONE PAK VFX 2.0

FAX **$239.95** 4333

EGS 28/24 SPECTRUM
GO BEYOND AGA GRAPHICS

with this real-time, 24-bit, true-color graphics enhancement card. Programmable resolutions up to 1600x1280! 800x600 in 24-bit! Incudes a custom display pass-through cable for single monitor use. Many applications are ready to run and it includes the acclaimed EGS PAINT as a bonus, too! Bring workstation power to your Amiga!

2MB RAM



$349.00 5309

GVP G-FORCE A2000 ACCELERATORS

G-FORCE 040 33MHz
4MB RAM w/ math coprocessor $1095 4322

G-FORCE 68030 40MHz
Last batch of these classic A2000 Accelerators $598.95 3843

ORDER HOTLINE **800-872-8882**

Canada 800-548-2512
Order Hours: Mon. - Fri 7am to 6pm Sat. 8am to 5pm (PST)

Order Status 310-787-4520
Mon. - Fri 8am to 6pm
Sat. 8am to 5pm

CREATIVE COMPUTERS WILL NOT BE UNDERSOLD ON ANY IN-STOCK AMIGA PRODUCT! CALL CREATIVE FIRST!



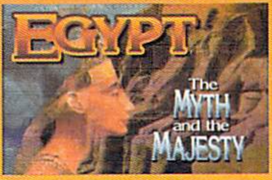
OPALVISION MAIN BOARD

The core unit of the modular OpalVision system. A true RGB, 24-bit frame buffer, it operates in any Amiga with a video slot. It allows smooth fading of pictures, color-cycling effects, and smooth, double buffered 24-bit animation. Includes connectors to the Video Processor and Scan-Rate Converter/TBC (optional modules). Includes a wealth of software.

FREE MONTAGE 24 Software with every OpalVision!

MONTAGE 24

- the popular, best-selling CG Software is yours for the taking. But only for a limited time. Just purchase an OpalVision Main Board between April 1 and June 30, 1994. Send Centaur Development a copy of the dated invoice with your name and address and your OpalVision Warranty Card and they'll send you a free copy of MONTAGE 24 for OpalVision. Centaur Development will even pay for the shipping and handling fees!



MONTAGE 24 features real-time font scaling, embossing and shadowing, color spreads and trasparency effects with an effective resolution of 1nanosecond.



The many image processing capabilities of MONTAGE 24 include translucency blending, image compositing and beveled boxes.



Consistently rated the best image processing software on the Amiga, OpalPaint allows you to easily create your own images or enhance and modify existing framestores. In addition to image processing, it has powerful painting and drawing capabilities. A full range of tools, real-time, full 24-bit.

OPALPAINT SOFTWARE

includes an expandable library of image processing modes, texture mapping, color and transparency gradients, multiple work modes, nozzle brushes and many other tools

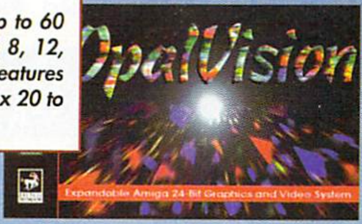
OpalAnimMATE

plays animations at rates of up to 60 frames per second. It works in 8, 12, 15, 18 and 24-bit modes and features selectable screen sizes from 32 x 20 to 768 x 286 pixels.

OPAL PRESENTS!

Every main board includes Opal Presents!, an icon-driven presentation program offering complete display control of OpalVision images, Amiga graphics and live video. Create sales presentations, clip libraries of your work, educational videos or whatever you can imagine!





THIRTY DAY MONEY BACK GUARANTEE MBG

WINNER AMAZING COMPUTING READER'S CHOICE AWARD 1993 "BEST GRAPHICS CARD"

16 Million colors, Superlative 32-Bit Painting, Awesome 24-Bit Animation, and now...

Professional-Quality Video Titling!

Centaur Development

$399.00

5002

OFFER CODE: P461MG14

ORDER HOTLINE 800-872-8882

Canada 800-548-2512
Order Hours:
Mon. - Fri 7am to 6pm
Sat. 8am to 5pm (PST)

Circle 13 on Reader Service card.

VIDEO Heaven

CREATIVE COMPUTERS™

Order Hotline
U.S. Orders
800-872-8882
Canada 800-548-2512

Byrd's Eye Software

SWIPES!

Color Special Effects for Amiga 4000 Based Video Toaster System

Swipes! takes full advantage of the Video Toaster 4000's graphic abilities, adding two full banks of colorful, dynamic effects including:

- Color Transperency Effects
- Special Effects Overlays
- Color Animated Transitions
- Alpha Channel Dissolves



$99.95 — 5724



Byrd's Eye Software

Paint Directly on the Video Toaster's 24-Bit Program Output with:

TOASTER FX

The Replacement Paint, Image Manipulation and Special Effects System for the Video Toaster

Now with ToasterFX and GVP's ImageFX, working with Video Toaster graphics becomes a TRUE "What-you-see-is-what-you-get" operation. Perform painting, image processing, morphing and scanning - all directly viewed on any Video Toaster's output buffer.

Bundle Package includes Toaster FX, ImageFX and ImageFX Video. $329.95 — 5736

Integrate GVP's ImageFX with the Video Toaster

$119.95 — 5150



ToasterFX requires GVP's ImageFX software for operation (ImageFX not included). Video Toaster software 3.0 or higher required. Direct painting on the Toaster's program output requires 2MB Chip RAM

dkb

HI-DENSITY FLOPPY DRIVES!
Power High-Density External Floppy Drive. #5367 ONLY $148.95



DKB 3128™

The "must-have" Toaster add-on!

Now you can crush the 16 meg fast RAM barrier! With the DKB 3128 you can access up to 128 megs of contiguous memory. Compatible with either the Amiga 3000 or 4000.

$295.95 — 5251

DKB 1202 BOARD

Now DOUBLE THE SPEED of your Amiga 1200 just by adding this board and RAM. Comes with math-coprocessor socket and clock, plus 2 slots for 72-pin RAM.

$119.95 — 5674

DKB 1240™ Accelerator

- 32-Bit Board
- Add up to 128 MB of RAM
- 40MHz 68030 Accelerator

- Upgradeable to 68882
- 50 MHz Math Co-Processor optional
- MMU included
- SCSI Interface optional

CALL — NEW

DKB Talon

Low-Cost 24-Bit Graphic Card for the Amiga 2000, 3000, 4000

- Zorro II Card
- 800 x 600 24-Bit color
- Fully Programmable Resolution
- Video Option
- Maximum 24-Bit Resolution
- EGS Workbench Emulation
- On-board Blitter
- Compatible with most 24-Bit Paint Packages

Coming Soon

MegaChip 500/2000 with Angus chip

Add another megabyte of Chip RAM!
Required to run Toaster 3.1 upgrade

$189.95 — 4229

ORDER HOTLINE
800-872-8882

Canada 800-548-2512
Order Hours:
Mon. - Fri 7am to 6pm Sat. 8am to 5pm (PST)

Order Status 310-787-4520
Mon. - Fri 8am to 6pm
Sat. 8am to 5pm

FutureVideo

V-Station® 3300 for Toaster



A/B Roll Edit Control System

Integrated with the Video Toaster
NEW SOFTWARE!

Multi-tasking edit controller can sync three VCRs simultaneously. Can read Hi8 RC Time Code, 8mm TC, and SMPTE/EBU TC (optional). Includes control software for Amiga. Easy to use A/B Roll editing software lets you set edit points, assemble, video insert, A/V insert, audio insert editing.

$1095.95 — 5433

CREATIVE COMPUTERS COLOR MONITOR MODEL AD-1970

BRAND NEW!



Designed from the ground up to be an Amiga Monitor!

- 14" Phillips tube
- .28mm dot pitch
- Full OverScanning (no black borders)
- Supports all new modes (including Super 72)

2-YEAR PARTS WARRANTY

$499.95 — 5718

Eureka 1200

Expansion Card for the Amiga 1200

4 MB RAM Expansion
25MHz 68882 Math
Coprocessor & Clock

Only $269.95 — 5740

Add DataFlyer SCSI Option...$99.95 — 5742

Limited Supply

WAVETOOLS

digital audio designs

breaks the 8-Bit sound barrier with high-resolution 16-Bit CD quality audio & direct-to-disk recording!



Wavetools hardware and software gives your Amiga the punchy sound quality of CDs and DAT recorders at a fraction of the price of other 16-Bit sound cards. State of the art circuitry with 64X oversampling, a frequency response of 10Hz to 20KHz and a dynamic range of 85db. Wavetools provides a pair of stereo I/O jacks to record from any line level audio source. Multiple waveform windows may be open simultaneously with the Wavetools software package. The extensive editing and overdub tools, plus various sampling rates and internal SMPTE time code sync mean you have plenty of power features! Works with all 2000/3000/4000 models.

$299.95 — 5657

30-DAY MONEY BACK GUARANTEE!

COMING SOON...

WAVETOOLS RTX MODULE

Finally a card that can read and write SMPTE time code, LTC and VITC versions. Burn time code windows onto incomming video for work prints! No other Amiga product does this. In addition to SMPTE lock, RTX provides SMPTE cue lists for timed playback of audio clips. Plus a DSP chip and 256K buffer. Adds multi-track capability to Wavetools. Mixing in real-time, up to 8 tracks. RTX supports both NTSC and PAL. Get all this added capability for under $400!

CALL FOR PRICING AND AVAILABILITY OF THE RTX MODULE!

LightWave without the Toaster? The solution is LIGHT RAVE

LightRave is a custom hardware module that emulates all of the Toaster functions needed by LightWave 3D™. It enables any Amiga to run LightWave without requiring a Video Toaster to be installed. LIGHTRAVE adds a suite of professional features never before available to Wave users. LIGHTRAVE will render images faster than a Toaster equipped Amiga, as no lengthy display time to the Video Toaster™ is required.

UPDATED!



- Compatible with all Amiga models
- True 24-bit display – render to OpalVision, DCTV, Retina, IV24, GVP EGS and Amiga AGA
- FASTER than a Toaster equipped Amiga
- Requires: Lightwave 3D or 3.0, Workbench and Kickstart 2.04 or later
- EGS support may require Image FX

NEW: RENDERS DIRECTLY TO PAL RESOLUTIONS
- FASTER HAM RENDERING
- IMPROVED FRAME STORE SUPPORT
- LIGHTWAVE 3.1 COMPATIBLE!

LOWEST PRICE ANYWHERE

$299 — 5292

OREGON RESEARCH MegaloSound



The fast, affordable, full featured, direct-to-disk 8-Bit stereo sound sampler for your Amiga. Excellent manual! Allows sampling at 70KHz mono and 39KHz in stereo on all Amigas. Extensive special effects (over 20) include echo, flange, chorus, filtering and re-pitch abilities. Comprehensive extras include waveform print-outs and player program.

ALL THIS AT AN UNBELIEVABLE PRICE! $39.95

Sequencer One Plus is a high-quality, 32 track MIDI sequencer with 8-Bit sample support. Unique easy-editing with Diamond Drag. Includes tutorial video tape. $89.95

VideoMaster combines the features of a video digitizer with a sound sampler in a single, easy-to-use, low cost unit. record 1/4 screen pictures at 30fps in monochrome, with audio. Full screen color stills.

For A500 $89.95 — 5626 | For A1200 $89.95 — 5625

HiSoft DevPac 3	$79.95	3921
HiSoft Pascal	$89.95	3924
Color Master for Video Master, splitter	$74.95	5627
Sequencer One (Basic sequencing, upgradable)	$29.95	5629
The Hit Kit (Music composition for sequencers)	$29.95	5631

OFFER CODE: P461MG14

ORDER HOTLINE 800-872-8882

Canada 800-548-2512
Order Hours:
Mon. - Fri 7am to 6pm
Sat. 8am to 5pm (PST)

DESKTOP PUBLISHING

CREATIVE COMPUTERS™

Minimum Order is $20.00 in U.S.A.
Minimum Order to Canada is $50.00
Minimum Foreign Order is $100.00

Professional Publishing



Pagestream 2.2 OEM

#1 in Amiga DTP. Winner of Amiga World's Experts' Choice Award and Amazing Amiga's Users' Choice Awards. Upgrade to 3.0 for only $125

$79.95 — 3833

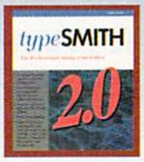
PageStream 3.0 — NEW!

NOW SHIPPING!

PageStream 3.0 has over 1000 new features, including AGA color, recordable ARexx, and the ability to load ProPage documents.

$229.95 — NEW

TypeSmith 2.0



CREATE & EDIT YOUR OWN TYPEFACES!

"A must have" –Compute!
"A must have" –Amazing Computing
"It's a must!" –Amiga Format

$109.95 — 5484

THE ULTIMATE HARD DRIVE

DATAFLYER 105SQ



EXPANSION SYSTEMS

Finally a hard drive that is truly practical. The DataFlyer 105SQ features proven SyQuest removable technology. Special version direct from manufacturer with our special driver guarantees compatibility with the A4000 including diskchange! Fast access times, 14ms avg., 1.6 to 2.3 MB/sec. max transfer rate (to and from media). Unlimited storage with 105MB cartridges. Very quiet unit. Small, only 3.5 x 1" drive. 2 Year Warranty. Includes one 105MB cartridge.

- #5561 DataFlyer 105SQ Internal IDE A4000 $395.95
- #5653 DataFlyer 105SQ Internal SCSI for Amigas ... $465.95
- #5654 DataFlyer 105SQ External SCSI for Amigas ... $545.95
- NEW DataFlyer 270SQ Internal IDE for Amigas ... $639.95
- NEW DataFlyer 270SQ Internal SCSI for Amigas ... $639.95

SyQuest 105MB Cartridges #61241 $59

CALL FOR SPECIAL PRICING ON 105SQ/4000S BUNDLE

DATAFLYER 4000S with External 25DB SCSI connector. #5379 — NEW LOWER PRICE! $79.95

XDS — DATAFLYER XDS IDE –Add external (inexpensive) 3.5" IDE hard drives to A1200 systems. Comes with all cables and external case! #5267 $69.95

DATAFLYER 1200S is a standard SCSI card that plugs onto the IDE header and converts it to SCSI. It still allows the use of IDE devices and does not take up a slot. NEW! Coming Soon – first week of June availability. $99.95

ASDG — Art Department Professional Version 2.5



Newest version has a new improved user interface. Supports EGS and Primera Printer (24-bit color dye-sub). Named "Best Image Processing Program" for 1992 by Amazing Computing, and now it's EVEN BETTER!

$179 — 5611

- #4348 MORPH PLUS • Professional morphing ... $125
- #5077 T-REXX PROFESSIONAL 2.1 for Toaster .. $117
- #5638 ADPro Conversion Pack, version 2.5 .... $45.95
- #5164 Pro Control for ADPro or Morph Plus $49.95
- #5195 CygnusEd Professional 3.5 .... $59.95

CALL CREATIVE FOR THE LOWEST PRICES ON ALL ASDG PRODUCTS

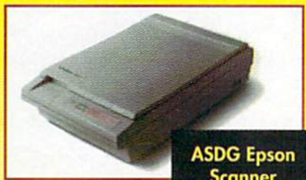
EPSON®



AP-3250 24-pin printer
Highest quality, high speed dot matrix printer for the Amiga!

$179.95 — 4606

EPSON®



Color Scanners

High quality flatbed scanners rated best in Amiga market!

- ES-600C • 24-bit, 300 dpi ... $789 — 4664
- ES-800C • 24-bit, 400 dpi ... $1089 — 4665

ASDG Epson Scanner Driver Software with scanner purchase $97.95 — 2953

Epson is a registered trademark of Epson America

ORDER HOTLINE 800-872-8882

Canada 800-548-2512
Order Hours: Mon. - Fri 7am to 6pm Sat. 8am to 5pm (PST)

Order Status 310-787-4520
Mon. - Fri 8am to 6pm
Sat. 8am to 5pm

New from Innovision Technology!

MONTAGE features real time font scaling with 1ns effective resolution. Automated sequencing. Network quality 24-bit titles & graphics!



MONTAGE for the Video Toaster $316.95 — 5424

MONTAGE 24 for AGA, IV24, OpalVision, NTSC $226.95 — 5073

MONTAGE 24 for AGA, IV24 OpalVision, PAL $226.95 — 5384

Imagemaster R/t v1.5

BLACK BELT SYSTEMS

A brand new image manipulation product

Designed to replace Imagemaster and Image Professional. New features of Imagemaster R/t include new unified filesaver, new multiframe processor, new Radial Wave, new morph controls, new Guassian Blur, faster display, loads Toaster alphas, new area select tools, tablet support, unlimited zoom and pan, "onionskin" compositions, Toaster framestore support, Online Help. The January issue of Amiga World says "Imagemaster R/t is a tool no serious artist should be without!" Supports Opalvision, Firecracker, AGA.

$69.95 — 5282

NEW! LEGENDARY DESIGN TECHNOLOGIES

ProPics

High quality 24-bit backgrounds by professional photographers. Each volume contains 20 images.

- #5714 Volume #1: Scenic and Landscape
- #5715 Volume #2: Textures and Patterns
- #5716 Volume #3: Still Life Imagery
- #5717 Volume #4: Abstract Imagery

Great with OpalVision

$22.95 each

Buy all four for $79.95

PLUS FREE IMAGE PROCESSING SOFTWARE!

Version 1.5 Address It!

Powerful mailing-list management.



Create mailing lists, rosters, envelopes, roatry cards and more with a few simple clicks! Supports laser, dot-matrix & ink-jet.

$27.95 — 5069

Invoice It!

Powerful business management.



Powerful invoicing software! Automatically create quotes and convert them to actual invoices with one click!

$34.95 — 5145

Visit our computer SUPERSTORES in California! 4 BIG LOCATIONS



Los Angeles	Los Angeles/South	Orange County	San Diego
1505 Wilshire Blvd.	4453 Redondo Bch. Blvd.	23710 El Toro Rd., Ste. F-1	8841 Clairemont Mesa
Santa Monica	Lawndale	Lake Forest	Kearny Mesa
California 90402	California 90260	California 92630	California 92123
(310) 394-7779	(310) 542-2292	(714) 859-3300	(619) 467-4700

SEND ALL MAIL ORDERS FOR AMIGA PRODUCTS TO: Creative Computers, Order Dept., 2645 Maricopa Street, Torrance, CA 90503

Overnight Delivery Only $6.95*

FEDERAL EXPRESS

*for what other companies charge for ground service

Order by 5:00pm EST and get your order tomorrow!

- Offer is valid thru June 30, 1994 and applies to in stock items only. Continental U.S. only
- Credit card problems, system problems, Acts of God, shipping to a different addressthan your billing address, and orders to some rural areas or small cities will incur additional processing and shipping time
- Orders over 3 lbs. incur additional shipping charges
- Does not include insurance

Order Hotline: 800-872-8882

The Creative Computers Exclusive MBG Program

When you purchase products in this catalog that feature this logo, it identifies products that come with a 30-day money back guarantee. Return is subject to policies of our customer service department. Ask your sales representative for more information.

THIRTY DAY MONEY BACK GUARANTEE — MBG

OUR POLICIES

CC-Money Back Guarantee rules: Limited-time offer expires 6/30/94 and only applies to the indicated products. You must call Customer Service to obtain a Return Authorization number before sending the item(s) back. The item(s) must be in original condition and in original packaging, with blank warranty card. No damaged items will be accepted. Refunds issued within 14 days of receipt of the returned item(s). Refund is limited to $3,000 per customer. No refunds on freight or labor charges. CUSTOMER SERVICE: for tech support call 310-542-2292 from 11 a.m. to 7 p.m. PST. ***"Standard Overnight Service" by Federal Express is not available in all areas. Those "Extended Areas" take two days. Check with your local Federal Express station for delivery confirmation and delivery times. COD's add $6-No Personal /Company checks. Call for all other shipping information. All advertised prices are CASH prices. Visa/Master Card same as cash; Discover add 1%. RETURN POLICY: Call Customer Service at (310) 787-4520 for return authorization. All returns without authorization number (RMA#) will be refused. Returned products must be in original condition and packaging and must be sent back within 30 days of our invoice date. No refunds, please. Defective product exchanges only. We make no guarantees for product performance. Exchanges with unlike products are at our option and subject to a 20% re-stocking fee. CONDITIONS: Prices and availability of product are subject to change without notice. MAIL-IN ORDERS: Send money orders or cashiers check for fastest service. Personal checks - 10 days to clear. Include: Name, Address and telephone number (no P.O. Boxes, please). If ordering by credit card include expiration date and billing address. Call for exact shipping rates. INTERNATIONAL TOLL FREE ORDERING POLICIES: For Canada, FPO, APO - Minimum order $50. All other countries: minimum order $100. For VISA and Master Card orders you must FAX or mail a signed photocopy of your credit card - front and back. Please have your credit card number ready before calling. ***PRICE GUARANTEE: U.S. Only. Applies to all merchandise advertised by all authorized Amiga dealers except merchandise on sale and out-of-stock. We will give you our "delivered" price lower than the other authorized Amiga dealer's "delivered" price. There is a minimum order amount of $20 for orders to the U.S.A. Calfirnia Sales does not apply to price guarantee. Prices good through June 30, 1994

Ad design: CLS & WJC

OFFER CODE: P461MG14

ORDER HOTLINE 800-872-8882

Canada 800-548-2512
Order Hours:
Mon. - Fri 7am to 6pm
Sat. 8am to 5pm (PST)

ACCENT ON GRAPHICS

The "Art" of Science and History

65

A continuing series of tips, techniques, and tricks for creating more imaginative Amiga graphics.

By Joel Hagen

I RECENTLY HAD the pleasure of participating in a conference on Planetary Data Visualization put on by a research institute in southern California. I showed a series of Amiga experiments in which general-purpose graphics software was used in creative ways. A paint program, for example, can be used to do investigation and analysis.

If you are an educator, this approach can be a way to involve students in active explorations of art, science, and history on the computer. Mars is the thread linking my experiments here, but it could just as well be European history or desert ecology. For this month's column, I will describe the series of experiments I did for my presentation at the Planetary conference. Don't focus too much on the techniques, but rather on the concept of using software in new ways.

The Living Past

Cassini did a series of drawings of Mars in 1666. Locating these in a library book, I brought them into the Amiga using an Epson scanner linked to ADPro (ASDG). You could also use a video camera or digitizer. In DeluxePaint (Electronic Arts), I cut the individual drawings of the planet as brushes and registered them on a sequence of animation frames. This brings a new dimension to data three centuries old as the features of Cassini's Mars move across its face, tracing its rotation. The same animation technique can be applied to any sequence of still images. Early Mars images from astronomy books yielded animations of a moving cloud photographed in 1926 and a full rotational cycle shot from the Lowell Observatory in 1971.

I turned my attention to historic maps and scanned one Schiaparelli had drawn from observation in 1877. (Be aware of copyrights as you think about your intended use.) I scanned from a scientific magazine more than 75 years old for the illustration accompanying this article. Using techniques explored in an earlier article on planet building ("Around the World in 80 Frames," Oct. '91, p. 38), I turned that map into a rotating planet.

Briefly, the method in DPaint involves grabbing an animbrush from a section of a moving map, then using it to Wrap Fill a sequence of circles. The result is the illusion of a spinning planet. The Mercator map projection distorts into a good approximation of a hemisphere as shown in the illustration. In preparing your map you may need to add a blank area north and south of the maximum latitudes represented if they are less than 90 degrees. I have used this technique to "restore" the planet as it was seen by astronomers over many decades.

In January 1993, I had the opportunity to paint Mars from direct eyepiece observations at Lick Observatory as Mars came closest to earth. I used the Amiga to create reference material to aid my observation and painting. Scanning a USGS (Geological Survey) Mars map derived from Viking space missions, I used DPaint to create a 24-frame animation of the spinning planet. The eyepiece of the telescope inverted the image of Mars, but the Amiga made it simple to invert the map and spin the planet in the proper direction relative to our viewing instrument. I printed out the 24 frames on a single page with hourly notations about the central meridian. This provided a visual reference each night to interpret the "albedo" (light and dark) features I was seeing. For Mars, 24 frames was serendipitous as Mars' rate of rotation is similar to our own, a little over 24 hours. For other planets, the number of frames would need to be adjusted to match its rotation period in order to use the sequence as a clock reference.

For instant color drawings, I scanned my pencil sketches and then used a paint program to change the palette of the image from gray to a gradient of color matching what I perceived through the eyepiece. I also made detailed paintings directly in the computer. Later I produced large acrylic paintings for exhibition based on these renderings. I used the Amiga monitor

If you're an educator, or just like to experiment on your own, these projects may provide some fascinating possibilities for linking art with science and history.

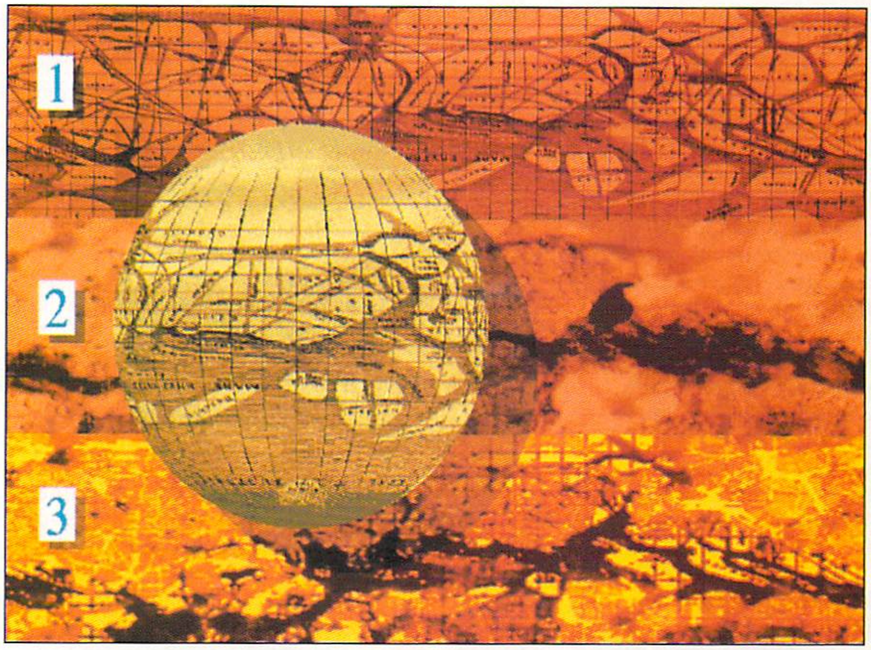
as a reference while I painted.

Further Experiments

The work with historical Mars maps got me thinking about perceptions of Mars over the years. I decided to analyze several maps for consistencies of perceived albedo features. The first task was to distort a group of maps to the same dimensions and orientation. ADPro has an excellent interface for cropping and scaling, but you can get workable results from any paint program. I had to crop all maps to 60 degrees, the greatest common north/south dimension among the group. I then used DPaint to cut and reassemble each map, aligning them to the zero/zero coordinate near Sinus Meridiani.

For my first comparison of map features, I simply loaded each one to a different frame of an animation and then played them at high speed. Areas of consistency were apparent in the rapid display. My next experiment was to merge two maps at 50% transparency. I used ADPro's Composite options, greatly enhanced in version 2.5, but the same experiment can be performed in any paint program that allows image merging with controlled transparency. In the resulting image, areas that are either light in both images or dark in both images remain light and dark. Areas that are light on one map but dark on the other, however, average each other out and become a neutral tone in the new image. This makes it easy to see where the perceptions of different observers were consistent and where they differed. It may also offer some insight into the changes in albedo features over time.

Going further in map comparisons, you could use ImageFX (GVP), ADPro, or Imagemaster (Black Belt) to process each map image before combining them. One observer might use darker tones in his or her drawings than would another. Image processors can adjust the Dynamic Range, Contrast, Gamma, and Histograms of images to bring them subjectively closer to a consistent base of values. In the same programs, images can then be combined with new rules, such as addition or subtraction of color values. This can reveal new information. You can approximate these results in paint programs by using Lighten or Darken or Shade modes to adjust overall value. Creative use of color stenciling during a merge can also produce interesting results.



A map of Mars drawn in 1877 (#1) is compared with a modern Mars map (#2) for consistencies of features. Map #3 is the result. The comparison can be made in paint programs, image-processing software, or, as in the illustration, by user-written utilities. The top map is also shown distorted as a spinning planet (overlay) using DPaint tools.

I wrote a quick utility to compare two maps pixel by pixel. The program weighed the difference in value of each pixel pair and then created a new image. If the difference was slight, it averaged the value for the new pixel. If the difference was great, it substituted a very bright value. The illustration shows the result of that process. Image #1 is Schiaparelli's 1877 map. Image #2 is from a USGS map. Image #3 is the comparative map produced by my analytic routine. I used Director2 (Right Answers Group), which is no longer available, but Basic or any good authoring software would work.

Continuing the Amiga Mars exploration, you can generate landscapes and animations using VistaPro (Virtual Reality Labs) or Scenery Animator (Natural Graphics). This is an exciting option, seeing regions of the planet from vantages otherwise inaccessible. On the scientific side, an Amiga explorer can adjust the vertical exaggeration of the data to see the computer landscapes without distortion. Every computer-generated Mars flyover you have seen on TV has been stretched vertically for effect. You can take the law into your own hands and see a different Mars reality if you so choose.

I have worked with many educators eager to make use of computer graphics in the classroom but at a loss for good projects. Perhaps this column will suggest a line of thinking in which general-purpose graphics software can be used as tools of investigation and exploration. ■



Video in Focus

PRACTICAL ADVICE FOR AMIGA VIDEO PRODUCERS

By Paulo de Andrade

About this "new" nonlinear editing. . .

Nonlinear editing. Suddenly, everyone wants in on this new technology.

But, is it really new? No! It's actually the oldest form of motion-picture editing, born when early filmmakers discovered they could enhance storytelling by re-arranging sequences. Editing film involves cutting it into strips and then splicing sequences together. The process is nonlinear; the editor has the freedom to add or remove frames anywhere—even a single frame in the middle of the reel. While painstaking, this allows for very fine-tuned edits.

When videotape was invented, physical editing became a problem. Because of the electronic properties of television signals, cutting and splicing video often resulted in image glitches. The best editors perfected this technique, but still, intricate editing was impractical. And unlike older VTRs, newer decks employed helical scanning heads easily damaged by splices.

Copying sequences to another tape became the preferred way to edit video. Unlike splicing, copying is a linear process: Adding a frame to the middle of an edited tape requires that all subsequent edits be redone. Computer-controlled linear editing enables you to store all edits in a list, however, and with the right setup, you can add that frame and have the controller automatically redo the rest.

A Vision For Desktop

As a network TV editor when I bought my first Amiga, I recognized how easy it would be to edit programs entirely within computers—once the proper levels of RAM, storage, and speed became available. In 1991, I saw my prediction realized in a practical manner. Quantel, a technology leader in television equipment, introduced the Flash Harry—a dedicated non-linear system that took digital video directly from a D1 digital VTR and allowed you to quickly assemble a video by cutting and pasting virtual filmstrips. Then, the program was recorded back to the D1 VTR in real time at hi-res broadcast quality. The Harry came with a full-blown Quantel Paintbox for graphics and titles, a high-end effects generator, multiple digital-audio tracks, and more. The unit was not only physically huge, with high-speed processors and storage devices, but it had a price to match—about $750,000 including the D1 VTR.

All good things eventually come to the desktop, of course, and nonlinear editing is no exception. We have already begun to see this, with Digital Micronics' Digital BroadCaster and MediaCaster, and NewTek's announcement of the Video Flyer (plus systems on other platforms). I expect in the next couple of years or so that desktop systems will offer most (if not all), of the Quantel's features for a reasonable price.

How Nonlinear?

Because it makes all video segments accessible almost instantly, a well-designed nonlinear system can save a lot of time searching. The ease of rearranging segments also makes experimentation easier (although this won't save time for those who cannot control the urge to try every possibility!). On a linear editing system, you can see several previews without having to record, but even with complex computer-based editors, a large sequence of continuous previews may be impossible unless you have several source machines (your target images may be scattered widely on one source tape).

Still in its infancy, desktop nonlinear editing does have drawbacks. Two of them—storage and compression—relate to the large size of broadcast-quality video files.

If you are handling two projects at a time, tight storage space might force you to back up all data from the first and then digitize the data for the second before you can start editing. And, in editing a program with hours of source material, you must first select which images to store in the computer.

Also, because you can ordinarily store only a few minutes of broadcast-quality video on disk, manufacturers have developed several compression techniques. Digital Micronics boards use Motion JPEG and MPEG, for instance, while NewTek's Flyer will use a new proprietary scheme. Unfortunately, compression always causes some form of image degradation, and the highest levels of compression can render images useless.

Developers are working to overcome today's limitations, but the present systems (mostly on other platforms) leave a little to be desired, at least for high-end broadcast use. Many that claim broadcast quality don't match the level of Betacam SP or MII. Also, several don't have all the components necessary to replace a traditional edit suite. Marginal character and effects generators, poor paint systems, and inferior audio capabilities impose limitations. Worse yet, many systems were designed without input from video professionals.

This does *not* mean current nonlinear systems are no good. If you seldom or never produce for television, today's nonlinear systems may provide the performance and quality you need. Even if you do produce for TV, you may want to use the versatility and speed of nonlinear to off-line your programs and take the resulting edit list to a high-end linear system for final assembly.

The wait for Amiga nonlinear editing appears to be worthwhile. NewTek's Flyer and products like it may provide us with the most affordable nonlinear system on any platform. Nonlinear fans will soon have several choices. Right now, options abound for linear editing (see "The Fundamental Things Still Apply," p. 20, June '94), and some of the current systems, including the popular AmiLink, promise nonlinear compatibility. What's old is new. . . again. ■

Paulo de Andrade is president of Digital Reality, an Amiga-based broadcast-video and 3-D animation company in Seattle.

FACTORY DIRECT PRICING

Special Offer!

ASDG

DIRECT

Get The First Family Of Amiga Imaging Products At Factory Direct Prices!

Product Name	Description	List Price	DIRECT Price
Art Department Professional® 2.5	The number one Amiga color image processing package.	$299.00	$173.00
MorphPlus™	The finest morphing available on the Amiga, plus other great effects.	$295.00	$142.00
T-Rexx Professional™	Complete control over the Toaster and 11 other related products.	$249.00	$135.00
TruePrint/24®	Advanced 24-bit color or 8-bit grayscale printing on standard Amiga printers.	$ 89.00	$ 59.00
CygnusEd Professional™	The leading Amiga text editor. Fully ARexx compatible.	$119.95	$ 67.00
ADPro/MorphPlus Add-Ons			
ProCONTROL™	A point-and-click batch processing front end for ADPro or MorphPlus.	$ 90.00	$ 57.00
Professional Conversion Pack	TIFF, Targa, Alias, SGI, Wavefront, Sun Raster, X Windows, PICT and Rendition formats.	$ 90.00	$ 52.00
CGM Loader	Allows reading of images in the CGM image file format.	$ 89.95	$ 57.00
Epson Scanner Driver	A WYSIWYG driver for Epson full page flat bed color scanners.	$200.00	$114.00
HP ScanJet IIc Driver	A WYSIWYG driver for the HP ScanJet IIc full page flat bed color scanner.	$200.00	$118.00
Abekas Driver	Read and write digital video tapes in the Abekas Digital Disk Recorder format.	$200.00	$133.00
Lasergraphics LFR Driver	A driver for the Lasergraphics LFR and LFR+ digital film recorders.	$250.00	$173.00
Polaroid CI3000/CI5000 Driver	A driver for the Polaroid CI-3000, CI-5000 or CI-5000S digital film recorders.	$200.00	$127.00

ORDER NOW! (608)273-0473

VISA MasterCard

Shipping charges will be added to each order. All registered or unregistered trademarks are property of their respective holders.

Circle 39 on Reader Service card.

From p. 13.
modate the myriad ways that synth manufacturers identify the order of their programs. The Sounds window serves a similar function for the Amiga's internal sounds.

Maybe Next Time

Sequel could use a bit of fine-tuning. The lack of menus takes a bit of getting used to, as do the custom file requesters. A pop-up help screen would make it easier to master the many useful keyboard equivalents.

Also, if you use a hi-res, interlaced screen, the print and controls are minuscule—a custom-screen option would help here. Tempo changes between patterns are not always recognized in a song, and sometimes tracks get out of sync at the start of a new pattern. Finally, a lack of example files hinders the learning process, which is steep. This means you'll need the manual, which is thorough, if a tad disjointed. For instance, the Quick Start section leads you on a page-flipping journey for illustrations and descriptions.

These quibbles aside, Sequel is a solid performer with the mark of extensive field-testing. I often found that the designers had addressed multiple issues in efficient ways. Once you see the method to their madness, you'll fly through your sequencing tasks. While it lacks the bells and whistles of Blue Ribbon's Bars&Pipes Pro, Sequel offers a surprising number of sophisticated and complementary features that boost it above entry-level sequencers. Its forward-thinking yet comprehensive approach makes it ideal for beginner through mid-level sequencing needs.

—Rick Manasa

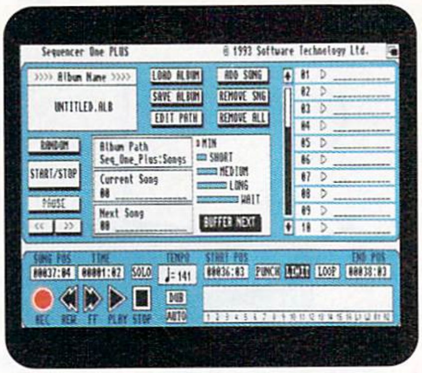
Sequencer One/ Sequencer One Plus

***Oregon Research*, $39.95/$99.95;**
optional instructional videotape $39.95

All Amigas.
1.3/2.0/3.0 compatible.
Hard-drive installable.
Not copy protected.
Accelerator compatible.
***Minimum system:* 2MB.**
***Recommended system:* 4MB, AGA Amiga, hard drive.**

Entry-level music sequencers.

Sequencer One and Sequencer One Plus are UK-import MIDI sequencers



Sequencer One Plus makes Amiga and MIDI notes easy to maniplulate.

and sample players that provide powerful recording and editing features. Both have four-channel, 8-bit sample playback using the Amiga's internal voices in addition to 32 tracks of MIDI data. You'll find real-time and step-entry support, importing and exporting of MIDI files, external syncing, and an intuitive graphical interface.

Features List

Both Sequencer One and One Plus use the tried-and-true tape-deck analogy for the program interface. A thorough and well-written manual, complete with index and illustrations, accompanies each product.

All basic recording is done in the track-list screen, which is identical in both programs, except that Sequencer One Plus has buttons for soloing and punching in and out of tracks. A Step editor screen provides a piano-roll graphical interface for editing and step entry, reminiscent of the editing screens Dr. T's software employs. The Bar editor, similar to the old Master Tracks Pro (Passport) song-editor window, lets you shuffle bars and sections of music around for fast arranging and duplicating of repetitive sections.

While neither program creates samples, both let you mix IFF samples with MIDI instruments in your compositions. To play a sample on a particular track, type L, R, or LR into the MIDI-channel column and select a patch number from the sample-palette list.

You edit music in one of two ways in Sequencer One. When you're in the Step editor, clicking on the Info icon opens a text window that lets you select parameters, including the note velocity, length, pitch, and start time. The Bar editor lets you select blocks for cutting and pasting throughout the song. Once you copy or cut a set of bars to the clipboard, you can merge it with or overwrite data in an existing track. The Tidy Blocks feature prevents portions of the note information from being lost when you're cutting and pasting.

One Plus Exclusives

Sequencer One Plus provides the additional features of Diamond Drag editing, the Tempo Map, and the Juke Box screen. The Diamond Drag graphical interface is an appealing alternative to the Info editor. When it is selected, each note sprouts a diamond on the compass point that corresponds to one of the four parameters accessible in the Info icon method. Just grab and drag a diamond to change the note's pitch, length, start time, or velocity. This feature is so intuitive and easy to use that you'll wonder how you ever got along without it. A blue square gives you access to a submenu that lets you resize and copy the note, snap it to the grid, change the grid size, delete the note altogether, or change it to a control or program-change message.

The Tempo Map allows you to change the tempo of your piece at any given point in discrete steps. The Juke Box loads up to 32 songs and plays them randomly or in a user-defined order, with whatever delay you choose between songs. There is always some delay, however, even with Minimum selected, so you can't use the Juke Box to link different sections of the same piece of music.

Many of the features of Sequencer One Plus exceeded my expectations for an entry- to mid-level sequencer. The range of control offered by the track operations is extensive. For example, the Quantize feature lets you select the quantizing interval, and determine whether you move the note itself or just its starting and stopping points. You can transpose notes, change all occurrences of one note to another, and scale or shift velocities and lengths of notes. Extensive MIDI-filtering options are also available, as is Sys Ex recording, internal or external synchronization options, and so on. The practical features and ease of use of Sequencer One Plus enable it to hold its own against any of the upscale sequencers.

Where's the SMUS?

Both packages seem aimed at the begin-

ner and semi-pro, which is the same market that Deluxe Music 2.0 is after. SMUS support, now missing, would make Sequencer One and Deluxe Music a dynamite combination for the neophyte interested in composing and scoring computer music. I would also like to see an option for an interlaced screen or a virtual screen to provide ready access to all tracks at once.

Sequencer One Plus, in particular, would make a great addition to any MIDI musician's bag of tricks. The Diamond Drag system provides one of the easiest editing interfaces I've ever seen—one that other sequencer designers would do well to emulate.

Both programs get the ideas down simply and save them in MIDI format for importing into a more powerful package, such as Bars&Pipes Professional or Dr. T's KCS, for further editing. All in all, both represent good value, and I highly recommend them for their intended audiences.

—Rick Manasa

SPARKS

***MacroSystemUS*, $149.95**

Video Toaster/LightWave 3.0 or 3.1-equipped Amigas.
2.0/3.0 compatible.
Hard-drive installable.
Not copy protected.
Accelerator compatible.
***Minimum system:* Video Toaster/LightWave 3.0 or 3.1.**
***Recommended system:* Same as minimum.**

LightWave 3.0/3.1 animation utility.

Imagine a fabulous 3-D animation chock full of shooting stars, showers of confetti, and swarms of killer bees. Now imagine the headaches you'd suffer trying to create that kind of animation with the NewTek Video Toaster's LightWave 3D program. After loading dozens of copies of each object, one at a time, you'd have to move each one into position and set an initial keyframe. Finally, you'd have to create a separate motion path for each object.

If you're immediately discouraged by the prospect of creating such an animation manually, you'll be thrilled to hear about the advent of Sparks, a LightWave utility that takes the drudgery out of the process. A particle-animation program, Sparks lets you move whole groups of objects around at once, applying to them forces such as gravity, air drag, and wind. You'll have newfound abilities to create explosions, snow, leaf storms, and (you guessed it) showers of sparks.

An Object In Motion . . .

The simplest function that Sparks performs is manipulating particle objects—special objects you create in the LightWave Modeler. Instead of connecting the points in the objects to form larger polygons, you convert each point to a one-point polygon. LightWave always renders this kind of polygon as a single, colored pixel. By moving the points in the object around, Sparks controls the movements of the particles.

The program allows you to set the beginning position of all of the points to the same coordinate, or to place them at the vertices of any LightWave object. From this initial point, you can move them in a set pattern (anything from a spherical explosion to a tight spray in a single direction), target each particle individually by using the points in a second object to describe their paths, or have them follow the path specified by a LightWave object-motion file.

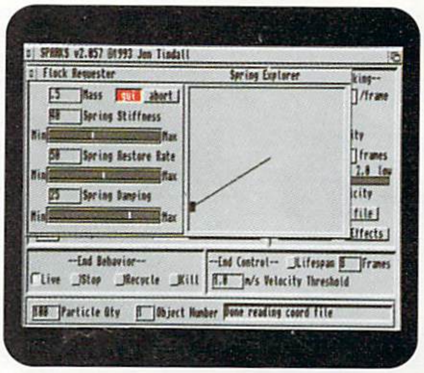
Once in motion, these particles can be influenced by gravity, air drag, wind (steady breezes, puffs, or swirls), as well as movable "gravity wells"—areas that either attract or repel them strongly. Flocking controls allow you to force particles to rejoin the group if they've been nudged away. You can make the particles bounce if they hit the ground, or fade out after a number of frames. You can launch all of the particles at once, have them appear a few at a time, or specify the frames in which to launch them.

Animating particle objects provides interesting effects, but moving dots around has its creative limits. To address this, Sparks lets you replace each particle object with a normal LightWave object, changing a shower of sparks, for example, into a shower of glittering gold stars. You can also add attributes such as motion blur, rotation, and displacement mapping. The catch is that when you substitute objects for particles, Sparks must create a LightWave scene file that contains a keyframe for each object at every frame. This consumes a lot of time and memory, but affords you the luxury to sit back and watch.

. . . Tends To Stay In Motion

Moving lots of objects in exactly the same way results in unnatural, mechanical-looking motion, so Sparks provides several controls to counter this. For instance, you can specify a variation of velocity so that the particles move at slightly different speeds, or you can set a bounce probability so that only a certain percentage of the particles bounce. In short, you can set your objects to move in mechanical lock-step or with fluid, organic-looking motion that makes them appear to have a life of their own.

In addition to all of the tools for creating LightWave scenes, Sparks includes a number of macros for use with the Modeler program. These let you capture the coordinates of an object's vertices and save them as a position file; take a LightWave motion path and create a keyframe at every frame, making the motion file suitable for use as a Sparks



Sparks' interface provides new controls for LightWave.

object path; slice an object into small polygons, suitable for flexing with bones, and so on. Of special interest is the Breakup macro, which subdivides an object into smaller objects. When you keep them in the original position, these pieces look like any normal, whole object, but when you move them with Sparks, the object explodes, or crumbles, or reassembles itself, depending on the motion scheme you create.

For an additional $25, Sparks owners can purchase a pair of utility programs from MacroSystemUS. The Lightning Bug program attaches a light to every particle in your scene, allowing you to

Continued on p. 56.

AMIGA WAREHOUSE

ORDER LINE • USA & Canada
1-800-258-0533

AMIGA CD32

Includes 2 FREE GAMES

- 2 MB RAM
- 14 mhz 68EC020 Processor
- Dual Speed CD ROM Drive
- 11 Button Hand-held Contoller with Connections for Optional Mouse, Joystick & Keyboard
- Video Out to TV or Monitor



In Stock Now! Call for Prices!

Now available: MPEG Module for movies - Call for pricing

Coming Soon!

MICROBOTICS **SX-1** EXPANSION INTERFACE FOR THE CD32

This board assembly plugs on the back of the CD32, still allows the use of the CD32 Full Motion Video Module ihn its normal slot, and provides the interfaces from the unit: **INTERNAL-IDE interface • 72pin SIMM socket**

EXTERNAL-RGB Video • IDE interface • Parallel interface • Floppy drive interface • 9-pin serial port • Plug for AT type 101 key keyboard • Audio input to allow mixing of audio

$149

CD32 TITLES & ACCESSORIES

CD32 ACCESSORIES

MOUSE	$29
KEYBOARD	$68
KEYBOARD ADAPTER	$15
EXTRA CONTROLLER	$27
MOTION VIDEO MODULE	CALL

CD32 GAMES PLUS

7 GATES OF JAMBALA	$39
ARABIAN KNIGHTS	$25
BATTLESTORM	$24
CASTLES II	$39
CD32 FOOTBALL	$39
CHAMBERS OF SHAOLIN	$39
D/GENERATION	$39
DEEP CORE	$39
DEFENDER OF THE CROWN	$39
DIGGERS	$39
FIREFORCE	$39
GROLIERS ENCY. V1	$39
GROLIERS ENCY. V2	$149
INSIGHT	$49
INTERNATIONAL KARATE	$25
JAMES POND 2: ROBOCOD	$39
JOHN BARNES SOCCER	$39
LABYRINTH OF TIME	$39
LEMMINGS	$39
LIBERATION	$39
MEAN ARENAS	$39
NAUGHTY ONES	$39
NIGEL MANSELL	$39
NICK FALDO GOLF	$45
OSCAR	$39
PIRATES GOLD	$39
SEEK & DESTROY	$39
SIM CITY	$24
SUMMER OLYMPICS	$39
SUPER PUTTY	$25
TROLLS	$39
WHALES VOYAGE	$39
ZOOL	$39

CD32 TITLES COMING SOON

ALFRED CHICKEN
CHAOS ENGINE DANGEROUS ST.
JURASSIC PARK
LEGACY OF SORASIL
LOTUS TRILOGY
MICROPROSE GRAND PRIX
MICROCOSUM
REACH OUT FOR THE GOLD
SURF NINJAS
TFX
WING COMMANDER
WINTER SUPER SPORTS

DISCIS STORY BOOKS *

BENJAMIN BUNNY	$10
CINDERELLA	$10
HEATHER HIT 1ST HOME RUN	$10
LONG HARD DAY ON / RANCH	$10
MOVING GIVES/STOM. ACHE	$10
MUD PUDDLE	$10
NIGHT BEFORE CHRISTMAS	$10
PAPER BAG PRINCESS	$10
SCARY POEMS	$10
TALE OF PETER RABBIT	$10
THOMAS SNOWSUIT	$10

*REQUIRES A MOUSE

MOVIES

DIGITAL VIDEO TITLES REQUIRE FULL MOTION VIDEO MODULE

APOCALYPSE NOW	$29
BLACK RAIN	$29
FATAL ATTRACTION	$29
HUNT FOR RED OCTOBER	$29
INDECENT PROPOSAL	$29
PATRIOT GAMES	$29
POSSE	$29
SLIVER	$29
STAR TREK VI	$29
THE FIRM	$29
THE NAKED GUN 2 1/2	$29
TOP GUN	$29

SHOWS-CONCERTS

ANDREW LLOYD WEBBER	$29
BILLY RAY CYRUS: LIVE	$29
BON JOVI: KEEP THE FAITH	$29
BRYAN ADAMS: WAKING THE NEIGHBORS	$29
ERIC CLAPTON: CREAM OF	$29
STING: TEN SUMMONERS TALE	$29

CHILDRENS CD

THE BEST OF BABY SONGS	$29
LAMB CHOP'S PLAY ALONG SONGS	$29

SPORTS

NFL 100 GREATEST TOUCHDOWNS	$29

ADULT

PLAYBOY MASSAGE	$59

KARAOKE TITLES AVAILABLE
CALL FOR COMPLETE LIST

A1200 GAMES plus SPECIAL

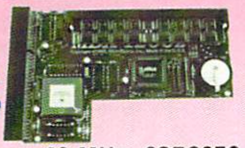
THIS EXCLUSIVE A1200 PACKAGE IS ANOTHER GREAT AMIGAMAN VALUE ...

Package includes an Amiga 1200 computer w/powersupply, mouse and TV adapter plus these great software titles: Pinball Dreams arcade pinball simulation, Trolls AGA, and Quick Write word processor.



CALL FOR CURRENT PRICE!

M1230XA



High speed 68030 Accelerator

W/32 Bit RAM Board up to 128 MB RAM, Math chip Option, Includes Realtime Clock

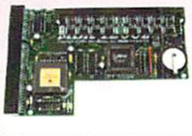
50 MHz 68030 w/MMU		40 MHz 68EC030	
50/0/0	$379	40/0/0	$299
50/50/0	$599	40/33/0	$399

Other configurations available

MBX 1200z

MATH CHIP 32-BIT WIDE RAM And REAL TIME CLOCK FOR THE NEW AMIGA 1200

FPU, 32-Bit Memory,w/Clock, Calendar & Bat. for the 1200



14MHz 68881	25MHz 68882	50MHz 68882
$129	$198	$349

AMIGA T-SHIRTS

ALL SHIRTS ARE 50% COTTON, 50% POLYESTER



AMIGA POLO SHIRT
White Sports Shirt for Casual Wear Bouncing Ball and Shark Logo. Sizes: M, XL **$19**

AMIGA JACKET **$59**
American Made. Heavyweight nylon. Best Quality Lined Winter Sports Jacket. Allow up to 3 weeks. Sizes: S,M,L,XL. XXL Avail. $7 extra. Embroider name $5 extra

White T-Shirts Lightweight I Love My Amiga on front Sizes: M,XL **$9**

Black T-Shirts Heavyweight Design on front Amiga Logo on back Sizes: M,XL **$11**

Red T-Shirts Heavyweight Design on front Amiga Logo on back Sizes: M,XL **$11**

© 1993 AMIGAMAN

AMIGA MUGS



$6

2 GREAT MUGS TO CHOOSE FROM!
- I Love My Amiga
- You've come a long way baby

AMIGA HATS

CHOOSE FROM 3 GREAT STYLES!



$8

ALADDIN 4D



Revolutionary 3D modeling, rendering & animation package. Zoom, rotation controls, unlimited lights, paths, wave sources, gases.

$249

CSA Twelve Gauge



Rated #1 in Amiga World

The only ALL IN ONE single board Solution for the Amiga 1200 that provides superior ACCELERATION NETWORKING SCSI Controller

TWELVE GAUGE	
33/0/0	$429
33/33/0	$529
50/0/0	$499
50/50/0	$699

ONE STOP MUSIC SHOP



16-Bit, 32 Voice. Fully digital stereo audio. 4MB soundfile ROM, E-Mu G1.5 proprietary DSP, 20 hz to 20kHz frequency response. 2 stereo outputs at =4dBM into 600 Ohms. Integrated MIDI interface.

$559

SUPERJAM!



Create accompaniments, soundtracks, styles & grooves quickly & easily. Stereo TurboSounds, 2 octave chords, visual volume & panning.

$79

BARS & PIPES PRO 2.0



Improved notation display & editing, revised look/feel, groove quantitize, drum mapping, sequence trigger, Toaster control, much more.

$229

Power Tools Kit.......................$34
Performance Tools Kit..............$34



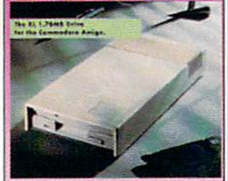
STEREO SPEAKERS
Just plug into any Amiga Stereo output for clear audio

HD/4 Amplified Computer Speakers
Dual 3.5" dynamic drivers & built-in stereo equalizer for accurate stereo reproduction. **$49**

HD/1 Amplified Computer Speakers
Dual 3" dynamic drivers. Separate volume, bass, treble circuits control balance & levels. **$29**

Optional Power Adaptor **$9**

HIGH DENSITY DISKDRIVE



XL DRIVE - HIGH DENSITY
High Density External Drive for any Amiga formats 1.76MB with standard DD Disks compatible for PC Disks requires Work Bench 2.1 or above

$179

Internal for A2000/A4000 .... $165

CD ROM HEADQUARTERS



NEC MultiSpin 38 .... $389
NEC TripleSpeed 3XP $589
TEXEL 3028 internal $399

• All units are Amiga ready • SCSI interface required • Includes ASIM CD software •

CD SOFTWARE SELECTION:

TEXTURE CITY 100 Professional graphic backgrounds	$79
AUDIO RESOURCE 1000 sound files, editors, mixers, generators	$19
GRAPHICS RESOURCE 100's of graphic programs, animations & images	$19
GIFS GALAXY	$22
HEROIC AGE SPACE FLIGHT History of NASA and manned space flight	$19
ULTIMATE MOD COLLECTION 1700 Mod files and computer generated music	$22
AMINET 5000 files, Games, sound files, modem and much more	$19
GIFS GALORE 5000 Color Images in 42 categories	$19
COLOR MAGIC Drawings for business, education in 256 color 300dpi	$29
MEGA MEDIA 1000+Audio and Graphic files for MM	$25
MULTIMEDIA 1200 Audio, 1000 pictures and movies	$19
SPACE & ASTRONOMY	$25
GUTENBERG PROJECT Famous Literary works and more	$29

New! Primera Color Printer

Reviewed in Dec. issue of Amazing Computing



MORE COLORFUL
- High-resolution thermal transfer color printing.
- Primera's color is brighter, richer, sharper and more vibrant than other color printing technologies.

MORE EFFICIENT
- Prints up to four times faster than ink jet.
- Requires no drying time, unlike ink jet. Eliminates wrinkling and smearing.
- Easy to use with only two buttons: On/Off and On line.

SEE THE RESULTS FOR YOURSELF
SAMPLE PRINT- $5 (refunded on purchase) Send your Picture on an Amiga Disk & we will return to you a print of your picture.
SEND TO: PRIMERA OFFER- c/o Computer Basics, Inc. 1490 N. Hermitage Rd., Hermitage, PA 16148

$795

With Photo Realistic (Dye Sublimation) $949

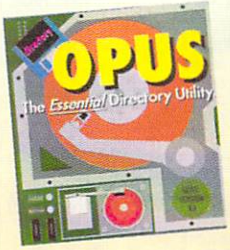
AMIGANET AFTER DARK AMIGA ONLY BBS
412-962-0961
Game Reviews • Product Information • Service Tips
After Dark Operations 6 PM to 9 AM EST Mon-Fri

MasterCard VISA DISCOVER NOVUS

Orders Only USA & Canada
1-800-258-0533

Open LONGER HOURS
9-9 Weekdays
10-8 Saturday
12 to 5 on Sunday
SUNDAY HOURS 12 5

HOT PRODUCTS FROM
INOVATRONICS
The leaders in AMIGA Productivity Software



OPUS $59

Realize your full productivity with Directory OPUS! OPUS allows you to easily manipulate data files; display images; play sounds, ANIMS, BANIMS, and MODS; and launch programs from its powerful, yet easy to use interface. A "must-have" for hard drive owners. Use OPUS once, and you'll never want to be without it! *(It's the best-selling software utility on the Amiga!)*

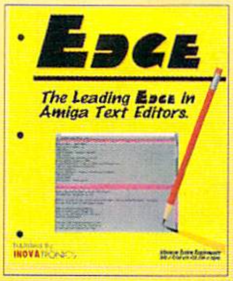
CanDo!



The CanDo software authoring package allows you to take advantage of the Amiga's powerful architecture, regardless of your technical abilities. You can program anything from a simple presentation to the most advanced professional application program in record time. In short, CanDo takes the guesswork and drudgery out of programming and lets the creative genius in you run wild.

$109

CanDo's scope and performance makes it a must for training, simulation and other applications.



New EDGE $59

Edge is an easy-to-use, professional-quality text editor ideally suited for notes, scripting and any other forms of text manipulation. Features include: unlimited number of files, unlimited number of windows/file, infinitely configurable user interface, fast search & replace, full AREXX support with macro recording, AREXX controllability, multi-level undo, extensive "on-line" help, comprehensive paragraph formatting and MUCH more! The Leading Edge in Amiga Text editors.

GIGAMEM



GigaMem virtual memory system lets your Amiga utilize unused hard drive space as RAM, eliminating the need for additional hardware! With Gigamem you can run memory-hungry programs (such as Art Department, LightWave, CanDo and PageStream) without running low on memory.

Requires an 020/030/040 based Amiga with MMU and OS version 2.1 or higher.

$89

Professional Bundle



PROFESSIONAL PAGE 4.0

Automatic Genie functions automate most routine page layout and DTP tasks. Page Genies automatically create custom page layouts Function Genies provide new ease of use and user customization of program. New features include: undo button, irregular text wrap, enhanced color separation and under color removal algorithms, auto-tiling for output of larger pages.

PROFESSIONAL DRAW 3.0

An object-oriented color graphic design and illustration tool, now has dynamic hot link to Pro Page 3.0, and more than 30 automatic function and tool Genies for fast, effortless creation of professional-quality artwork. Over 275 ARexx commands allow user to edit or create Genies. Text and color handling, enhanced color separation, auto-tiling, undo, redo. Includes 145-piece clip art collection and utility allowing structured drawing clips to be converted to IFF bitmaps.

both for a low price of... $154

ANNOUNCING
Distant Suns 5.0



NEW FEATURES:
- 3-D planet rendering-experience 3-D planetary motion!
- View images in 256 colors (8 bit AGA)
- 8,000 sample stars from the Hubble Guide Star Catalog (16 million stars) More Hubble data available seperately.
- Intuitive tool pallette
- Greater selection of AREXX commands

Hardware Requirements: AmigaDos 2.0 or greater, 2MB RAM, and Hard drive

$56

New CALIGARI BROADCAST

Up to 8000 x 8000 pixel resolution. Direct support for single frame controllers. 3D Studio and Wavefront file compatible. Animatable, Deformations. IFF 24 output, and much more.



$299

CALIGARI 24

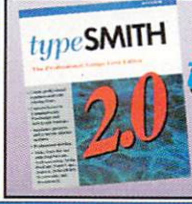
Modeler, renderer, and animator employing virtual reality technology. Full object editing functions including point edit, real-time feedback using a virtual reality inter-face, fast rendering of photorealistic images, AGA, IFF support for textures and output.

$129



PageStream3.0 $224

The Ultimate desktop publishing program! PagesStream3 provides the professional typesetting and graphic tools you need. It has a feature-paced toolbox to create any type of shape, which you can color with PANTONE® colors and gradient fills. Import and export text and graphics in many formats, and see pictures in full color on screen. AGA compatible! Automatic Flash macros automate most page layout tasks and create custom page designs. Create your own macros with recordable ARexx! Load ProPage documents and edit ProDraw drawings. Unlimited Undo and Redo, extensive online help, autosave, dot leaders, index generation and more! Package includes BME 2 image processor, PageLiner 2 text processor, 50 fonts and 100 graphics!



typeSMITH v 2.0 $124

Create bitmap and outline fonts for all your programs! Convert between PostScript, Compugraphic and Soft-Logik formats. Autotrace bitmaps and generate bitmaps from outline fonts. Automate font creation with ARexx. Copy and paste characters between fonts, and add professional hinting jto your fonts. *Compute, Amazing, Amiga Format and AmigaNews* all called TypeSmith a must-have program. Voted best DTP utility by *Amazing's* readers.

AMIGA WAREHOUSE

Orders Only USA & Canada

1-800-258-0533

CUSTOMER SERVICE (412) 962-0533
CUSTOMER SERVICE HOURS
10 a.m. - 5 p.m. Monday thru Friday

INTERNATIONAL ORDER LINE
412-962-0567

Micro R. & D.

SWIFTY MOUSE
True Three-Button. Use with Opus, Brilliance!, Etc.
2 Yr. Warranty
$26

BIGFOOT 2000!
300 Watts. Super Heavy Duty, Great for Video Workstations.
$149
BIG FOOT 500... $86

A-1200 RAM Expansion
Holds Up to 8MEGS, Includes Co-Processor Socket and Battery Backed Clock/Calendar.
$99

X-Calibur
A-4000/040 RAM. Expansion & Accelerator. Available in 33 & 25Mhz versions! A Must For The Professional.
CALL

New! **Transition**
Multi-Platform Graphics Conversion and Processing Software. Very Easy to Use. Built-in Batch Processing. Supports IFF, PCX, BMP, JPEG etc.
$39

New from... MACROSYSTEM

WARP ENGINE
The Only Expansion Device you need for your Amiga 4000 (or Amiga 3000) that provides High-Speed 040 Acceleration, up to 128 MegaBytes of Local 040 Burst Memory and the fastest SCSI-II Controller Available! Why? Because all of this expansion is on a single board that installs into the CPU slot- Not a Zorro III slot!

FEATURES	WarpEngine	GVP 040/40	FastLane
28MHz, 33MHz, 40MHZ versions	YES	NO	NO
28MHZ Upgradable to 33 and 40MHz	YES	NO	NO
Expandable Onboard to 128MegaBytes Ram	YES	NO	YES
Built in SCSI-2 Hard Drive Controller	YES	NO	YES
Uses Industry Standard SIMM Modules	YES	NO	NO
Uses any Combination of SIMMS	YES	NO	NO
Allows use of the Memory from the Amiga	YES	NO	NO

28 MHz.... $839 33MHz.... $1299 44 MHz.... $1579

RETINA
24Bit Frame Buffer and Workbench Emulation. Analog RGB output, 800x600 Full 24Bit 16.7 million color display. Non-interlaced Full Workbench Emulation with resolution such as 1024x768 or 1280x1024 in 16 colors or even more! Up to 2400x1200! Paint program comes with Retina. The Retina can still be used to display 24Bit graphics while emulating Workbench. Requires the 2.0 or greater operating system.
W/2MB.... $345
W/4MB.... $495

TV Paint... $219
With RETINA.....$200

TOCCATA
The Toccatta is a full 16Bit audio digitizer with 3 Stereo inputs, digitize at up to 48 Hz in 16Bit and 8Bit direct to harddisk. Playback from HardDisk up to 16 channels in 16Bit. 64 Times Overstamping, 16 sampling rates, Freq. Response 10 Hz to 20 KHz. Simultaneous Record & Playback from HardDrive.
$479

V Lab
Internal for the A2000, 3000, AND 4000. $399
Y/C Version $459
New External for 500, 600, 1200 $399
- 24 Bit RealTime Video
- Digitizer AGA Support
- Digitizes Full Frame in 1/30 of a second

MULTILAYER-ADPro
Requires Art Department Professional or MorphPlus & ARexx -AmigaDos 2.04 or higher. MultiLayer for ADPro is a compositing/layering interface for video professionals & artists using ASDG's ADPro program as a compositing engine. Improves ADPro's impressive array of compositing functions. Control up to 100 Layers.
$129

SPARKS™
Standard Particle and Real world Kinematic animation System for LightWave3D 3.0
$99

New FROM OREGON RESEARCH

Clarity 16 Here is the Low-Cost, 16 Bit Stereo Sampler you have been waiting for! Record samples up to 44.1kHz, cut and paste between multiple samples, MIDI functions, Sample sequencer, MORE!
$159

VideoMaster AGA Video digitiz-sampling all in one package. Full Color Stills, greyscale motion video clips, and Video sequence Editor. Also includes stand alone sequence player.
$89

MegaLoSound
Megalosound is an amazingly low cost, full featured, 8 Bit Stereo sound sampler. But that's not all! It also features Direct-to-Disk Recording of samples. Up to 56kHz sample rate.
$39

ColorMaster An accessory to VideoMaster which allows you to capture full color, full screen still pictures AUTOMATICALLY, from any video source.
$74

Sequencer One/Sequ. One+ Entry level & Mid-level sequencer systems. Play back samples at the same time as 16 channels of MIDI. 32 tracks, Sequencer One Plus includes easy to use Diamond Drag editing.
$29/$89

Devpac 3 Fast, Assembly language programming environment for all Amigas. Intergrated, multi-window Editor, Debugger, and FAST Assembling.
$79

24-Bit Color FLATBED SCANNERS

The MS1200 & MS2400 let you scan 16.7 million colors, 256 true greys, & line art. Perfect for the Toaster & other video, multimedia, & DTP applications.
- 2 Models: MS 1200 - 3 pass scanning; 1200 dpi max. MS2400 - 1 pass scanning; 2400 dpi max.
- 8.5" x 14" scanning area.
- FREE ColorKit Pro - saves 24-bit IFF/TIFF and more; Scan size limited only by available hard disk space.
- SCSI cable and terminator
- Optional transparency adapter & sheet feeder

MS1200 $899
MS2400 $1099
MIGRAPH

ColorBurst™ COLOR HAND SCANNER

Three scanners in one! Scan color, true grayscale and monochrome line art. Perfect for video, multimedia, desktop publishing and more.
- 4 Scan Modes: 262,144 colors; 4096 colors; 64 true grayscales; monochrome text
- 50-400 dpi (based on scan mode selected)
- ColorKit software - quick, accurate scanning; save IFF, HAM-8, and 24-bit IFF
- Parallel interface with cable
- AGA compatible
- OCR Jr. text recognition - S/W available option

$449
MIGRAPH

MIGRAPH MONOCHROME HAND SCANNER with

- * Touch-Up v3. (AGA compatible)
- * OCR Jr. text reader

NOW $199

EXPANSION SYSTEMS

Making Technology Affordable Since 1986

DATAFLYER 105SQ
3.5" Removable Media Syquest Hard Drive

The Ultimate hard drive features: ultra fast 14Msec access, 100K hours MTBF reliability, 2 year warranty, 3.5 "X1" drive unit, all cables etc, shirt pocket 105Mb cartridge, auto diskchange. Perfect for use as daily hard drive and fast file backup, transportating or storing large Toaster or Opalvision files. Soon combo SCSI & AT/IDE controller for A1200 and A4000 that

A4000 AT internal w/cart	$395
A4000/2000 SCSI internal w/cart	$459
A4000/2000 SCSI external w/cart	$539
105Mb cartridge	$79

DATAFLYER XDS
A1200 External IDE Case
Install Your Favorite 3.5" Hard Drive
Includes all cables and connections.
$79

MONTAGE & MONTAGE 24

MONTAGE for 2.0, 3.1 & Toaster 4000! The first high end titling application to directly support the Toaster.
$317

MONTAGE 24 for AGA Amiga and 24-bit Cards! $225

MONTAGE PostScript Module! Scale & Stretch PostScript Fonts interactively! Add exciting text effects! Includes 10 Fonts. $169

MONTAGE FONTS 1 10 additional fonts with International characters. $125

AMIGA VIDEO EXPANSION CHASSIS AVEC TOWER

Generous expansion chassis sits conveniently next to your Amiga computer. Designed to hold up to 8 PC style video cards and 4 to 5 SCSI hard drives, Syquest drives, tape backup units and even CDROM drives. Unit includes SCSI connection and internal and external wiring. Includes SCSI kit.
$299

IDEAL FOR THE FOLLOWING CARDS:
• Internal TBC's • Personal TBC III & IV • Kitchen Sync • Personal V-Scope • Amilink Editor

IDEAL FOR SCSI DEVICES
• SCSI Hard Drives • 3.5" or 5.25" • Syquest Removable Media Drives
• Bernoulli Box 150 • Tape Back Up Units • CDROM Drives

External SCSI HardDrive Cases

Single Bay open or closed front	$99
Upright Case for single 3.5HD	$109
Dual Bay for 2 half height HD's	$149
Four Bay open front (not shown)	$259

All Units Include:
• Power Supply • SCSI External Cable • Power Cable • SCSI Pass thru and Mounting Hardware • LED

IDEK MONITORS

MULTI-SCAN 15-40 KHZ
1024 X 768 Res.
IDEAL FOR VIDEO!

17" - $979

In Stock Amiga 4000

/030 .... $1695
/040 STARTING AT $1995
Tower ... Soon!

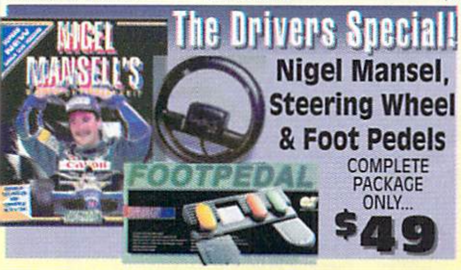
AMIGA WAREHOUSE 1-800-258-0533

Orders Only USA & Canada

Open LONGER HOURS
9-9 Weekdays
10-8 Saturday
12 to 5 on Sunday

Exciting Amiga Games

GAME	PRICE	GAME	PRICE	GAME	PRICE
A-TRAIN W/CONST. SET	$44	GLOBAL GLADIATORS	$43	ROBOCOP 3	$19
A320 AIRBUS	$45	GOAL (SOOCER)	$44	PROJECT X	$19
ALFRED CHICKEN	$33	GUNSHIP 2000	$39	QUEST FOR GLORY	$39
ALIEN BREED 2 W/ZOOL	$35	HERO	$34	QWAK	$19
ALIENS 3	$33	HIRED GUNS W/4 PLAYER ADP.	$35	REACH FOR THE SKIES	$39
ANOTHER WORLD	$24	HISTORY LINE (1914-1918)	$43	RULES OF ENGAGEMENT 2	$44
ARABIAN NIGHTS	$33	ISHAR	$37	SECOND SAMURAI	$35
ASHES OF THE EMPIRE	$24	ISHAR 2	$37	SECRET OF MONKEY ISLAND	$21
				SECRET OF MONKEY ISLAND 2	$38
				SEEK AND DESTROY	$27
				SENSIBLE SOCCER	$25
				SETTLERS	$44
				SILLY PUTTY	$19
				SIM ANT	$21
				SIM EARTH	$24
				SIMON THE SORCERER	$43
				SKID MARKS	$33
				SLEEP WALKER	$37
				SOCCER KID	$35
				SPACE HULK	$40
				SPACE LEGENDS	$40
				SPEEDBALL 2	$15
				SPORTS TOP 10	$37
AV8B HARRIER ASSAULT	$45	JET STRIKE	$33	STAR DUST	$24
B-17 FLYING FORTRESS	$39	JOHN MADDEN FOOTBALL	$19	STREET FIGHTER 2	$22
BART VS THE WORLD	$34	JURASSIC PARK	$33	SUBVERSION	$34
BATTLE ISLE'93	$33	KINGMAKER	$44	SUPERFROG	$33
BEAST LORD	$27	KRUSTY'S FUN HOUSE	$33	SYNDICATE	$40
BIRDS OF PREY	$21	LEGEND OF KYRANDIA	$43	TERMINATOR 2	$37
BLADE OF DESTINY	$51	LEMMINGS	$29	THE PATRICIAN	$41
BLASTAR	$33				
BLOB	$33				
BLUE & THE GREY	$44				
BOB'S BAD DAY	$33				
BODY BLOWS	$33				
BODY BLOWS GALACTIC	$35				
BRUTAL SPORTS FOOTBALL	$33				
BUBBA AND STIX	$27				
BURNING RUBBER	$33				
CAMPAIGN 2	$43				
CANNON FODDER	$37				
CARDIAXX	$16				
CHAOS ENGINE	$32				
CIVILIZATION	$43				
COMBAT AIR PATROL	$33				
COOL SPOT	$32				
CYBER PINK	$33	LEMMINGS2	$40	THEATRE OF DEATH	$37
DARK SEED	$45	LIBERATION	$37	TOM LANDRY	
DEEPCORE	$31	LORDS OF POWER	$43	DELUXE FOOTBALL	$29
DENNIS THE MENACE	$33	LORDS OF TIME	$19	TOO HOT TO HANDLE	$25
DESERT STRIKE	$36	LOST VIKINGS	$39	TORNADO	$44
DISPOSABLE	$33	MEAN ARENAS	$33	TROLLS	$15
DOG FIGHT	$33	MEGA FORTRESS	$44	TV SPORTS BASEBALL	$19
DUNE 2	$44	MICRO MACHINES	$33	URIDIUM 2	$33
EXCELLENT GAMES	$33	MORTAL KOMBAT	$27	WALKER	$33
F117A NIGHTHAWK	$19	NASCAR CHALLENGE	$21	WAR IN THE GULF	$33
F17 CHALLENGE	$39	NAUGHTY ONES	$32	WHEN TWO WORLDS WAR	$44
FATMAN	$43	NICKY 2	$37	WING COMMANDER	$33
FIGHTER DUAL PRO II	$37	NIGEL MANSEL	$37	WIZ AND LIZ	$37
FLASHBACK	$37	NODDY'S BIG ADVENTURE	$32	WONDER DOG	$33
FRONTIER ELITE 2	$33	NODDY'S PLAYTIME	$32	WOODY'S WORLD	$33
FURY OF THE FURRIES	$37	OUT OF THIS WORLD	$25	WORLDS OF LEGEND	$33
GENESIA	$33	OVERDRIVE	$33	YO JOE	$33
GLOB DULE	$39	PINBALL DREAMS/		ZOOL	$20
GLOBAL DOMINATION	$44	FANTASIES COMBO	$44	ZOOL 2	$31



The Drivers Special!

Nigel Mansel, Steering Wheel & Foot Pedels

COMPLETE PACKAGE ONLY... **$49**

AMIGA WAREHOUSE Big Game Blow Out!

$10	$15	$20	$27
Aliens 3	Assasin Special	D/Generation AGA	Soccer Kid AGA
Alfred Chicken	WWF Euro Rampage	Beastlord	Body Blows Galactic
Blastar		Burning Rubber	
		Seek & Destroy	
		Zool 2 Amiga	

Offer Good While Suppy Lasts! Limited Time Only



AGA Special Deal

Order Either of these AGA Games for $37-Get the other FREE!

ALIEN BREED II — BODY BLOWS GALACTIC



More A.G.A. titles

1869 AGA	$35	JURASSIC PARD AGA	$36
AIRBUCKS AGA	$34	LIBERATION AGA	$37
ALIEN BREED 2 AGA	$37	MORPH AGA	$37
BODY BLOWS GALACTIC AGA	$37	NAUGHTY ONES AGA	$33
BURNING RUBBER AGA	$33	NIGEL MANSEL AGA	$37
CHAOS ENGINE AGA	$27	OSCAR AGA	$33
CIVILIZATION AGA	$45	OVERKILL AGA	$27
D/GENERATION AGA	$33	PINBALL FANTASIES AGA	$33
DENNIS THE MENACE AGA	$36	RYDER CUP GOLF AGA	$33
DIGGERS AGA	$44	SECOND SAMURAI AGA	$35
FATMAN AGA	$33	SIM LIFE AGA	$44
FIGHTER DUAL PRO II (ENHANCED)	$37	SIMON THE SORCERER AGA	$49
ISHAR 2 AGA	$37	SLEEP WALKER AGA	$37
ISHAR AGA	$39	STAR TREK 25TH AGA	$39
JAMES POND 2: ROBOCOD AGA	$19	WHALES VOYAGE AGA	$37
		ZOOL AGA	$20

JET FIGHTER



$19
- Auto-Fire
- Egronomically Contoured Hand Grip
- Durable Nylon Center-Stick
- Six Durable Microswitches
- Four Stabilizing Suction Cups

Sigma-ray



$19
- Quality micro-switches for positive response
- Pistol-grip handle providing 8-way direction control
- Multiple fast-action fire buttons with autofire facility
- Powerful stabilizing suction cups

INTRUDER 1



$25
- Operating mode selctor
- 2 Positive-response fire buttons
- Pop-up fire button cover
- 1 & 2 player selector
- 6-foot cables w/ 9 pin connectors
- Stabilizing suction cups
- 6 U.S. military insignia stickers

MOUSESTICK

Enhanced mouse replacement with switch joystick emulation. Used independently, or with other input devices, such as, mice, joystick, or trackballs.



$69

SWITCHSTICK

Stick control with full-sized, foam-padded, pistol grip handle, and adjustable handle tension. Turbo-fire is a new feature on each of the three buttons, providing even faster response & a greater degree of control.



$31

THE BUG



$25 Ergonomically designed body for supreme comfort. Suitable for right or left hand. 8 directional microswitched control. Compatible with most computers including Spectrum +2/+3. 12 mo. warranty.

TOP STAR JOYSTICK



$29
- Ergonomically contoured hand grip
- Durable metal center-stick
- Six enclosed microswitches
- Auto-fire
- Patented shock absorbing system

ASDG SOFTWARE AND HARDWARE

ART DEPT PRO 2.5 *NEW*	$189.00
CYGNUS ED PRO	$69.00
DUAL SERIAL BOARD	$239.00
LAN ROVER ETHERNET ADAPTER	$299.00
MORPH PLUS	$149.00
PRO CONVERSION PACK	$52.00
STUDIO PRINTER SOFTWARE	$66.00
TREXX PROFESSIONAL 2	$125.00
TRUEPRINT 24	$56.00

AXIOM SOFTWARE

PIXEL 3D PRO v2.0	$169.00
WAVE LINK	$95.00
WAVE MAKER	$159.00

BRUCE SMITH BOOKS

A1200 THE NEXT STEP	$23.00
A1200 INSIDERS GUIDE	$23.00
AMIGA ASSEMBLER INSIDER	$23.00
MASTERING AMIGA AMOS	$26.00
MASTERING AMIGA AREXX	$27.00
MASTERING AMIGA C	$26.00
MASTERING AMIGA DOS 2 VOL 1	$27.00
MASTERING AMIGA DOS 2 VOL 2	$27.00
MASTERING AMIGA DOS 3 VOL 1	$27.00
MASTERING AMIGA DOS 3 VOL 2	$27.00
MASTERING AMIGA FOR BEGINNERS	$26.00
MASTERING AMIGA SYSTEMS	$29.00
MASTERING AMIGA PRINTERS	$26.00

CENTAUR VIDEO PRODUCTS

OPALVISION	$399.00
THRU JUNE 30 FREE MONTAGE WITH OPALVISION	
OPALVISION VIDEO PROCESSOR	$999.00
OPALVISION VIDEO SUITE	$999.00

DIGITAL CREATIONS VIDEO PRODUCTS

BRILLIANCE	$129.00
KITCHEN SYNC	$1279.00
KITCHEN SYNC S-VHS ADAPTER	$99.00
SUPER GEN SX	$799.00

GREAT VALLEY PRODUCTS

DSS8+	$83.00
TBC+	$795.00
I/O EXTENDER	$113.00
I/O EXTENDER EXTRA SERIAL	$25.00
1230+ TURBO PERF.II 40/0/4	$499.00
1230+ TURBO PERF.II 50/0/4	$684.00
A1291 SCSI ADAPTER	$88.00
4008 SCSI ADAPTER	$145.00
EGS-28/24 SPECTRUM 2MB	$520.00
PHONE PACK	$280.00
G-LOCK	$359.00
IMAGE F/X 1.5	$229.00

IOMEGA REMOVABLE HARD DRIVES

BOX150 INSIDER	$499.00
BOX 150 TRANPORTABLE	$599.00
BOX 150 CARTRIDGE	$105.00

NEW HORIZON/CENTRAL COAST

QUICKWRITE	$29.00
PROWRITE	$56.00
QUARTERBACK TOOLS	$49.00
QUARTERBACK TOOLS DELUXE	$69.00
QUATERBACK 6.0	$56.00

OXXI SOFTWARE

SUPERBASE PROFESSIONAL IV	$185.00
SUPERBASE PERSONAL IV	$94.00

SUNRIZE AUDIO PRODUCTS

AD516/STUDIO 16	$1299.00
AD1012/STUDIO 16	$539.00
STUDIO 16	
SMPTE OUTPUT	$135.00
TOASTER HANDLER	$135.00

SYQUEST REMOVABLE HARD DRIVES

88MB INTERNAL W/CABLE & CART	$499.00
88MB CARTRIDGE	$109.00

TRI-MEDIA DRAWING TABLETS

DRAWING SLATE 6X9	$399.00
DRAWING BOARD III 12X12 CORDED	$479.00
DRAWING BOARD III 12X12 CORDLESS	$599.00
DRAWING BOARD III 18X18 CORDED	$899.00
DRAWING BOARD III 18X18 CORDLESS	$999.00

EURO MAGAZINES Subscriptions



FREE SOFTWARE WITH MOST MAGAZINES

$9 per issue PLUS MAIL

FREE! I ♥ MY AMIGA mug with each magazine subscription

Amiga Format • Amiga Computing • Amiga User
Amiga Shopper • Amiga Action • Amiga Power

SUBSCRIPTIONS ACCEPTED
Don't miss the lates news in Amiga Computing and Gaming
1 MAGAZINE - $125/year $70/6 mo.

EACH ADDITIONAL MAGAZINE
$108/year, $65/6 months
Subscription Prices Include Mailing in the U.S.

New!

Amigaman has **A-Care**

Complete repair and upgrade service for all Amiga computers - Warranty or Non-warranty.

CALL 412-962-3176

FRUSTRATED WITH OTHER REPAIR SERVICES - CALL US... 14 YEARS DOING COMMODORE/AMIGA REPAIRS!

AMIGA WAREHOUSE

1490 N. Hermitage Rd., Hermitage, PA 16148
FAX: 1-412-962-0279

Get Your Order FAST!

No additional charge for FedEx*
For what others charge for UPS Ground we deliver in 2 days or less.

SHIPPING - NORMALLY WITHIN 1 BUSINESS DAY!

UPS GROUND OR 2 DAY SHIPPING BY FedEx	
$0 TO $99	7% Minimum $5
$99 TO $199	5% Minimum $7
$200 TO $499	4% Minimum $10
$500 TO $799	3% Minimum $20
$800	2.5% Minimum $24

FedEx Overnight add $6 to above
PR, HI, AK add $10 to above
APO, FPO & CANADA are shipped by Mail add $8 to above

International Orders (not APO, FPO.) Send copy or FAX of front & back of Charge Card w/signature. Call or FAX

COD orders OK. Add $5 Prices subject to change without notice. Returns accepted for 10 days after date of purchase

Call Customer Service for RA# before returning. Defectives replaced with same item. 15% Restocking fee for items returned and not exchanged for same. Customer responsible for return shipping.

*for orders under 10lbs. in the continental US. All orders fully insured. Monitors, computers, printers and other heavy items may incur additional charges...call for shipping quote.

Select Solutions® Inc.

Home/Office

Final Writer Release 2 ... $109.99
Home Front v2.5 ... 32.99
PHASAR v4.1 - Home Finances ... 47.99
Final Copy II ... *All-Time Best Seller!* ... 59.99
Professional Calc 2 AGA ... 59.99
The Office 3 AGA - 5 Applications in 1 ... *Reduced $20!* ... 79.99

Utilities & Programming

GP Fax Software (Class 1 & 2) ... $59.99
Batch Factory ... 34.99
Edge Pro Text Editor from INOVAtronics ... 59.99
ENLAN DFS v2.0 Ethernet Software ... 249.99
AMAX 4 (Color Macintosh Emulator) ... 329.99
PC Task v2.0 - Color VGA/SVGA Emulator ... 29.99
CrossDOS v5.0 w/Cross PC ... 34.99
Studio Printer Software by MacroSystemUS ... 69.99
SAS C v6.5 Development System w/C++ ... 249.99
Transition ... 39.99
DevPac 3 Assembler ... 76.99
Distant Suns v5.0 ... 57.99

Hard Drive Backup & Utilities

Directory Opus v4.1 ... $57.99
Quarterback v6.0 ... *Reduced!* ... 51.99
Quarterback Tools Deluxe ... 64.99
AmiBack v2.0 ... 41.99
AmiBack Tools ... 41.99
AmiBack/AmiBack Tools Bundle ... *Bundle Saves $29.99!* ... 59.99

CD³² Games

Chuck Rock ... $31.99
Diggers ... 31.99
Donk ... 31.99
Elite 2 ... 31.99
Global Effect ... 31.99
Total Carnage ... 38.99

Amiga Games

Arctic Baron ... *Reduced $7.00!* ... $27.99
Beneath the Steel Sky ... *15 Disks!* ... 38.99
Campaign 2 ... *Reduced $5.00!* ... 36.99
Chaos Engine AGA ... 33.99
Cool Spot ... 29.99
D/Generation ... 26.99
Darkmere ... 38.99
Excellent 4-Pack ... 38.99
F1 Racing (VROOM 2) ... 27.99
Genesia ... 27.99
Hired Guns ... 34.99
Innocent Until Caught ... 38.99
King's Table ... 33.99
Kingmaker ... 34.99
Legacy of Sorasil ... 34.99
Lemmings II ... 34.00
Liberation ... 29.99
Lords of Power 4-Pack ... 34.99
Lotus Turbo III ... 19.99
Mortal Kombat ... 27.99
Mr. Nutz ... 28.99
Naughty Ones ... 29.99



SWIPES!
Adds 20MB of special effects to your Toaster System!
$99.⁹⁹



Toaster/FX
Paint directly to the Toaster w/ GVP's ImageFX!
$119.⁹⁹

SANYO



Provides powerful single-frame animation at half the price of comparable units!
GVR-S950 Single Frame VCR ... $CALL



NEWTEK INCORPORATED
Toaster 3.1 Upgrade
$499.⁹⁹

Amiga Games (Cont...)

Pinball Fantasies AGA ... $31.99
Power Monger w/WWI Data Disk ... 19.99
Second Samurai ... 34.99
Settlers ... 38.99
Simon the Sorcerer AGA ... 38.99
Stardust ... 26.99
Street Fighter 2 ... 21.99
Strikes & Spares ... 34.99
Three Stooges/King of Chicago bundle ... 17.99
Total Carnage ... 29.99
Turrican 3 ... 27.99
TV Sports Boxing ... 15.99
Wing Commander ... 26.99

Paint & Animate

Aladdin 4D v3.2 ... $249.99
Hanna Barbera's Anim Workshop ... 49.99
Caligari 24 ... *Best Seller!* ... 129.99
Real 3D v2.0 ... 399.99
Disney's Animation Studio ... 31.99
Deluxe Paint IV v4.1 ... 117.99
Deluxe Paint IV AGA v4.5 ... 119.99

Video, Sound & Graphics Software

Imagine 3.0 ... $379.99
Sparks for Lightwave 3D ... *Particle Animation!* ... 87.99
Crouton Tools 4000 ... *Incredible!* ... 89.99

DIGITAL PROCESSING SYSTEMS INC.

Personal Animation Recorder ... $1,579.99
Personal TBC IV ... 799.99
Personal V-Scope ... 729.99
Personal Component Adapter .. *New Low Price!* ... 249.99



Warm and Fuzzy Logic
LIGHT RAVE v3.1
Emulates all functions of NewTek's Lightwave without having to buy a Video Toaster card!
Light Rave v3.1 ... $329.⁹⁹

Prime Image
Little Magic Box
Add Y/C In & Out to your Toaster system without taking up a slot!
Little Magic Box SVHS Toaster Adapter ... $649.⁹⁹

Video, Sound & Graphics Software (Cont...)

Toaster FX ... *In Stock!* ... $119.99
LightRave v3.1 ... 329.99
NEW Art Department Professional (ADPro) v2.5 ... 147.99
NEW Pro Conversion Pack v2.5 for ADPro ... 49.99
Swipes for Toaster ... 99.99
T-REXX Pro v2.1 for Toaster ... 119.99
Montage v1.02 for Toaster ... *New Version!* ... 319.99
Montage PostScript Module ... *Reduced $30.00!* ... 169.99
Montage Fonts ... 119.99
PEGGER - Automatic JPEG Compression ... 64.99
Anim Workshop v2.0 by Axiom ... *Great Reviews!* ... 89.99
Bars & Pipes Professional v2.5 ... *New Version!* ... 229.99
Deluxe Music v2.0 ... 89.99
Super Jam v1.1 ... 74.99
WaveMaker for LightWave 3D by Axiom ... 119.99
WaveLink - Two node render farm for Lightwave 3D ... 89.99
Pixel 3D Pro v1.0 ... 64.99

Video, Sound & Graphics Hardware

GVP Digital TBC Plus ... $729.99
Kitchen Sync - Dual TBC by Digital Creations ... 1,249.99
DPS Personal TBC IV ... 799.99
Prime Image TBC PCB Y/C S-VHS ... *Reduced $50!* ... 799.99
Personal Animation Recorder (PAR) by DPS ... 1,579.99
Personal V-Scope by DPS ... 729.99
Personal Single Frame Controller (SFC v2.5) by Nucleus ... 349.99
Personal Editor by Nucleus ... 539.99
SuperGen SX by Digital Creations ... 689.99



ASDG
Highly integrated ARexx script generator specifically designed for the Toaster!
T-Rexx Pro v2.15 ... $119.⁹⁹

INNOVISION TECHNOLOGY
Montage v1.02
For the Video Toaster



Excellent enhancement for Toaster CG
Montage v1.02 ... $319.⁹⁹



Adspec Programming
Aladdin 4D
Advanced 3D modeling and animation. Requires accelerator w/ 2MB RAM
Aladdin 4D v3.2 ... $249.⁹⁹

Video, Sound & Graphics Hardware (Cont...)

G-Lock Genlock by GVP ... $375.00
Retina 4MB by MacroSystem U.S. ... 499.99
Picasso II RTG 2MB by Expert Services ... 479.99
Studio 16 AD516 v3.0 by SunRize ... 1,199.99
Studio 16 AD1012 by SunRize ... 499.99
One Stop Music Shop by Blue Ribbon Soundworks ... 579.99
Y/C Plus S-VHS Hi8 ... 749.99
Little Magic Box HI8 (Y/C++) by Prime Image ... 649.99
Personal Component Adapter DC-2350 by DPS ... *Save!!* ... 249.99

Input Devices

Mice & Trackballs
AlfaData 400dpi 2-Button MegaMouse ... *Best Seller!* ... $29.99
AlfaData 260dpi 2-Button MegaMouse MK-II ... 19.99
AlfaData AlfaOptic 3-Button Optical Mouse ... 39.99
AlfaData AlfaPen 3-Button Optical Pen/Mouse ... 54.99
AlfaData Crystal Trackball 3-Button ... 45.99
AlfaData 3-Button Cordless Mouse ... 49.99

Joysticks
Suncom Slik Stick ... $7.99
Gravis Amiga Gamepad ... 19.99
Konix Amiga Analog Joystick ... 16.99

Scanner/Drawing Tablets
AlfaData AlfaScan 800dpi w/Scan & Save ... $189.99
AlfaData AlfaColor 400dpi Color Hand Scanner ... 299.99
AlfaData AlfaScan Plus 400dpi w/Touch•Up & OCR ... 189.99
ASDG Epson Scanner Pack ... 119.99
TriMedia Drawing Board 3 (12"x12") ... 549.99
TriMedia Drawing Slate (6"x9") ... 349.99

Accelerators & Drives

GVP G-Force 4000 '040 40/40/4/0 Accelerator ... $1,449.99
GVP A2000 040 33/33/4/0 Accelerator w/SCSI-2 ... 1,149.99
GVP 4MB 60ns 32-Bit SIMM for G-Force Accel ... CALL
GVP A1230 Turbo Plus Series II 50/0/4 ... 719.99
GVP A1230 Turbo Plus Series II 40/0/4 ... 529.99
GVP A1291 SCSI Option For A1230 Series II ... 92.99
DataFlyer XDS A1200 - 3.5" Ext HD Chassis Kit ... 69.99
DataFlyer SyQuest 105S SCSI Internal 3.5 Kit ... 439.99
DataFlyer SyQuest 105AT IDE Internal 3.5 Kit for A4000 ... 379.99
AlfaData AlfaDrive 3.5" External 880k Floppy Drive ... 74.99

Peripherals

AlfaData MultiFaceCard III I/O board (2 Serial/1 Parallel) ... $89.99
AlfaData ATBus IDE HD Controller Card 0/8MB RAM Exp ... 64.99
AlfaData A500 512K RAM w/Clock & Switch ... 34.99
AlfaData Auto Kickstart Plus - A500/2000 ROM Switch ... 19.99
AlfaData Oktagon2008 SCSI-2 Ctrl & 0/8MB RAM Exp ... 139.99
GVP I/O Extender 2 ... 119.99
GVP I/O Extender 2 Serial Kit (external) ... 19.99
PreVue Sync Strainer 23/15 Pin Monitor Adapter ... 49.99
Safe Skins (Keyboard protection for all Amiga models) ... 19.99
DataFlyer 4000SX SCSI Controller (A2/3/4000) ... 89.99
DataFlyer 4000SX25 Kit w/Ext DB25 SCSI Connector ... 99.99
SCSI Cable 50 Pin External Centronics ... 14.99
DKB MegaChip w/2MB Agnus (NTSC) ... 219.99
DKB 1202 0KB w/20MHz 68881 for A1200 ... 139.99
ASDG LAN Rover Thin Ethernet Card w/SANA II Driver ... 299.99
FASTLANE Z3 Fast SCSI-II w/0/256MB for A3/4000 ... 529.99

SAME DAY SHIPPING!*

* Applies to in-stock items only. Orders must be placed Monday thru Friday before 6:00pm CDT.

Add 2MB to your system now for only $139.99 and add an IDE hard drive later!

AlfaData ATBus2008

Connect up to two IDE drives and up to 8MB RAM!



ATBus2008 w/o HD w/o RAM	$64.99
ATBus2008 w/o HD w/ 2MB RAM	139.99
ATBus2008 w/ 210MB HD w/o RAM	299.99



Hanna-Barbera Anim Workshop

NEW!

Now, anyone can create professional quality cartoons!

Hanna Barbera Anim Workshop $49.99



Best Bernoulli Prices in the Industry!

150MB Bernoulli

Removable storage for any Amiga or Toaster System. Easy hook-up! 18ms SCSI!

Transportable External (Pictured) $579.99

The Insider Internal Kit $479.99

BLOWOUT PRICING!

Dozens of Prices Reduced!

ALL SALES FINAL! DEFECTIVES FOR REPLACEMENT ONLY!

CLEARANCE: Hot New Additions to the List!

Pagesetter 3 - DTP - AGA Compatible	$29.99
PIXEL 3D Professional v1.0 - OEM Vers/No Box	64.99
Professional Calc 2.0 AGA Spreadshe et	59.99
Professional Draw v3.03 by Gold Disk	59.99
Video Director - Editing System w/Hardware	59.99

CLEARANCE: Accolade Software Special

AV-8B Harrier Assault v1.1 by Domark	$27.99
Blue Angels: 3D Formation Flight Simulation	9.99
Elvira II bundled with Hint Book	9.99
European Challenge Scenery Disk for Test Drive II	9.99
HoverForce - Top Gun meets Blade Runner in 3D!	7.99
HOT! Jack Nicklaus Greatest 18 bundled with Vol. 1 to 5	19.99
Jack Nicklaus Greatest 18 Holes (Main Program)	9.99
Jack Nicklaus Golf Vol. 1 Oak Hill and more	4.99
Jack Nicklaus Golf Vol. 3 St. Andrews and more	4.99
Jack Nicklaus Golf Vol. 4 Great Courses/US Open	4.99
Jack Nicklaus Golf Vol. 5 Hazeltine and more	7.99
Pit-Fighter by Tengen - No. 1 Arcade Coin-op Hit	7.99
Shadowlands - Incredible RPG Experience by Domark	19.99
Stratego: The Computer Game	19.99
Tengen's Arcade Hits: KLAX, APB, Toobin' & 2 more	11.99
The Graphics Studio - Beginners Painting Software	2.99
Virtual Reality Studio: Includes FREE Tutorial VHS	49.99

CLEARANCE: Amiga Machine Specific Hardware

A1200: A1230 030 40/0/0 Turbo	$259.99
A2000: AmiNet Ethernet Card (Perfect for EnlanDFS)	199.99
A2000: Professional Video Rackmount Chassis	149.99
A500/2000: Drive Boot Selector Switch from DF1/2/3	14.99
A500: AlfaRAM 0/8Mb Ext Expansion w/Pass-Thru	49.99
A600: Kickstart Switch - 1.2/1.3/2.x ROM Switcher	9.99

CLEARANCE: Amiga Video Tapes and Books

Amiga Graphics Inside and Out (Programming)	$14.99
Amiga Intern: Programmers Reference Library	14.99
MultiMedia Workbook	4.99
VHS: Dazzle - A Video Kaleidoscope (Orig. Music)	3.99
Visionary Handbook (Oxxi)	4.99

CLEARANCE: Application Software

ARexx Rainbow Library Series Vol. 1 - Rexx Plus	$19.99
Buddy System for PageStream 2.2 - OnLine Reference	9.99
PAL Pro-Board Personal - CAD PCB Layout	39.99
PAL Pro-Net Personal - CAD Schematic Capture	49.99
ProVector 2.1 Structured Drawing and Illustration	49.99
Quma Version Control Utility and File Manager	7.99
Superbase Personal 2 v3.01	29.99
Templicity Spreadsheet Templates v2.0 for MaxiPlan	9.99

CLEARANCE: Games

Alfred Chicken by Mindscape (Euro)	$19.99
Atomino - Strategy at the Molecular Level!	4.99

GVP

Fax/Voice Mail System!



PhonePak .... *New Low Price!* $249.99

Auto Mouse/Joystick Switch

Use a mouse and joystick in the same port!



MegaMouse

400 dpi, 2-button, 5' cable



Auto Mouse/Joystick Switch	$19.99
MegaMouse	29.99

SPECIAL COMBO! Buy both for only...$39.99

Superbase™ PERSONAL 2

v3.01

Now Only... $29.99

CLEARANCE: Games (Cont...)

Barbarian II by Psygnosis	$4.99
Beast Lord by Grandslam (Euro) - Different	19.99
Blastar! by Core - Awesome Parallax Arcade Action	4.99
Blob - Addictive Strategy Arcade Action	4.99
Combat Air Patrol F14/F18 by Psygnosis	19.99
Deep Core by ICE (Euro) - Outstanding Intro	19.99
Diggers by Millennium (Euro) - AGA Only	19.99
Hook (The Movie) - Peter Pan in Neverland Again	4.99
Morph AGA	9.99
Nicky 2 - Euro Title	9.99
OVERDRIVE by Infacto - Superb Arcade Action!	14.99
Overkill AGA	7.99
PAL - Fighter Duel Professional Amiga	9.99
Prime Mover by Psygnosis	3.99
Push-Over; Featuring G.I.Ant - Arcade Mind Teaser	2.99
Red Zone by Psygnosis - 3D Racing Action	9.99
Shadow of the Beast III by Psygnosis	14.99
Star Trek 25th Anniversary AGA (HD Required)	19.99

CLEARANCE: Games (Cont...)

Super Space Invaders - An Amazing Sequel	$14.99
Swap - Hours of Strategy Puzzle Fun	9.99
The Addams Family Arcade Game	9.99
The Games '92: Espana - 30 Events!	7.99
Whale's Voyage by NEO (Euro) - Super Enhanced AGA	9.99

CLEARANCE: Hardware, Peripherals and Accessories

2 to 1 Parallel Auto Data Switch	$19.99
4 to 1 Parallel Auto Data Switch	29.99
AlfaScan 400DPI Hand Scanner w/Touch Up	139.99
AlfaScan Migraph OCR Upgrade (Junior)	19.99
Deluxe 3.5 Disk Box w/Lock - Holds 120 Disks!	9.99
DMI/Insite TODC-3A50 128Mb ReWritable Optical Disk	24.99
Edmark TouchWindow - Amiga Touch Screen	199.99
GTCO Ultima 12 x 12 Drawing Tablet for Amiga	149.99
GTCO Ultima 12 x 18 Drawing Tablet for Amiga	199.99
Replacement Power Supply for SupraModem 2400 (US)	3.99
Sharp JX-320 Flatbed Color Scanner	499.99
ASDG Pro ScanLab II v3.1 for Sharp JX-320	349.99
Sharp JX-320 Transparency Unit	149.99
Sharp JX-735 Ink Jet Color Printer	299.99
True Mouse - 2 Button Amiga Mouse	14.99

CLEARANCE: IntelliFONT Scalable Typefaces - WB 2.0+

Decorative Volume 3 - 6 Typefaces	$14.99

CLEARANCE: Video and Toaster Related Products

AniMagic by Aegis - IFF Animation and Effects	$19.99
ASDG's ScanLab 100 Ctrl/Interface for Sharp JX-100	19.99
Autoscript - Postscript to 3D Translation	9.99
Digi-View Gold v4.0 for PAL Systems	39.99
Media Station (Digi-View) for PAL Systems	59.99
PAL DCTV v1.1 - Paint, Digitize and Display	199.99
PAL VideoMaster GenLock - Retail is $1295!	149.99
Scene Generator v2.11	19.99
SpectraColor - Advanced HAM Painting Software	24.99
Toaster Video Music Box v1.6 - Composition	19.99
TV*Show v2.0 - Special Effects Slide Show	49.99
Visionaire - 2D Morphing and Deformation (Impulse)	19.99
Zuma Font Pack Volume 1 (Bitmap)	19.99
Zuma Font Pack Volume 2 (Bitmap)	19.99

FAST CD-ROM!

Double-Speed CD-ROM Kit For AMIGA® 2000 & 4000!

Complete Kit - Nothing Else to Buy!



Mitsumi FX001D

Kit Includes Internal CD-ROM Drive and the New AlfaData TANDEM™ Controller PLUS FREE Aminet CD-ROM Software!

$269.99

Caligari 2

Outstanding 3D Design and Rendering Power!



$49.99

Hurry, Supplies Are Limited!

NEW!



IMAGINE 3.0

By Impulse

New version of the most popular 3D design, rendering and animation software!

Now in Stock! $379.99

POLICIES

VISA, MasterCard and Discover accepted. No surcharge on credit card orders. Credit card is not charged until order ships. $5.00 COD fee, cash only. Prices are subject to change without notice. Call for current pricing. We are not responsible for typographical errors. 15% restocking fee for items returned and not exchanged for same. Customer is responsible for return shipping. Returns accepted for 10 days after invoice date.

Make the BEST Call!

1 800 322-1261

24-Hour Order Fax: 1 217 356-4312

Business Hours
M-F 8am-7pm CDT
Sat 9am-3pm CDT

Customer Service
1 217 355-2785
M-F 9am-6pm CDT

SHIPPING*

UPS GROUND	0-5 lbs	$5.00
	6-20 lbs.	add $1.00/lb over 5 lbs
	Over 20 lbs	add 50¢/lb over 20 lbs
	Monitors	$15.00
	Computers	$18.00

UPS Blue 2-day or UPS Red Next-Day shipping also available. Call for our low shipping rates!

* Rates apply to orders shipped within the continental U. S. only.

Circle 191 on Reader Service card.

From p. 49.
add lens flare to your swarm of objects. The MultiReplace program enables you to automatically replace every instance of an object, which can be mighty handy when you've got a hundred stars and want to replace them with a hundred ducks.

Complex Moves

Sparks' power notwithstanding, it's not particularly easy to use. With an interface consisting of a gray wall of buttons, the first-time user is clueless as to the program's functions, and the brief manual makes the erroneous assumption that all users are animation experts.

At least part of Sparks' problem, however, is due to the complex nature of 3-D animation. Author Jon Tindall may have figured that anybody proficient enough with LightWave to need Sparks would have a pretty good idea of how to use it. Although not a LightWave expert myself, I found that once I had worked through the tutorials in the manual and absorbed the basic concepts, I had no trouble understanding how to use the program.

Many LightWave users are surely willing to endure a brief struggle to get control of the tremendous power that Sparks offers. If you want to move large numbers of objects in LightWave and have their motion look fluid and natural, Sparks is currently the only way to go. Once you have mastered its many tools, your only problem will be finding enough hours in the day to try them all out.

—Sheldon Leemon

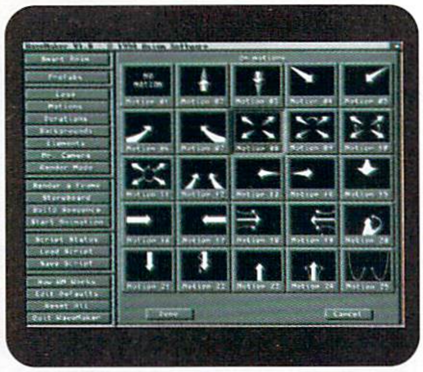
Wavemaker

***Axiom Software*, $249.95**

Video Toaster/LightWave-equipped Amigas.
2.0/3.0 compatible.
Hard-drive installable.
Not copy protected.
Accelerator compatible.
***Minimum system:* Video Toaster/ LightWave, ARexx.**
***Recommended system:* 2MB chip RAM.**

LightWave animation utility.

Wavemaker is an attractive alternative to the drudgery and struggles commonly associated with using LightWave in the Video Toaster to create and render logo animations. The program lets you make choices about the animation, and it generates a script that creates a scene file for LightWave.



Set your logos in motion with Axiom's Wavemaker.

Logos In Flight

To create a flying logo, you either select an object to serve as a logo in LightWave Modeler or use an image converted to LightWave's object format with a third-party conversion program. After you select the logo you want, Wavemaker can automatically resize it, for the logo needs to fit within defined parameters.

There are three distinct parts to a Wavemaker-generated animation: On, Off, and Hold Position. You choose each one from a set of preset moves or positions represented by a variety of buttons. On and Off move the logo in or out of the scene in a variety of defined motions and directions. As its name implies, the Hold Position brings the logo to rest at various angles and positions. All the moves take advantage of ease-in/ease-out adjustments so as to achieve a smooth and natural motion.

Whether you edit the durations of the moves or the whole animation, the overall script is updated in the process. This allows you to change one part of the animation without recalculating other segments.

Wavemaker also controls elements other than the logo's motion. Backgrounds for the animations can include a choice of gradients, a solid color, an image, or a sequence of images, and you can adjust the camera view and choose rendering options. While all this is not extremely difficult to achieve within LightWave, having the choices governed and limited by Wavemaker makes it easier for the LightWave neophyte to control an animation.

Public Works

Elements represent a unique and useful feature of Wavemaker. They are a collection of preset object animations that you can set in motion behind the logo. You'll find 48 different background elements, including Lines, Circles, Streaks, Swirls and many others. An animation can contain up to eight layers of elements, and the majority have user-controlled parameters, including options such as direction, speed, color, and direction of rotation.

Wavemaker also offers the ability to create storyboards. A storyboard is an RGB or Framestore image with a number of panels showing different frames of the animation. You can choose the beginning and ending frames, along with the option of showing either 9 or 16 intervening frames. This gives you a rough overview of your animation before you render it, and it's a good way to show clients a sample of the finished product.

Also included is an Animation Sequencer, which allows the program to tell LightWave to render up to 15 animations in sequence. You can save the images of each scene in a specific directory, if desired. This is a very useful feature, as it streamlines the set-up and rendering legwork required to produce multiple animations.

Odds and Ends

A short, indexed manual with a brief but helpful tutorial accompanies Wavemaker. The package also includes a videotape that shows all of the different moves and elements available. While it's not exciting to watch, it can give clients an idea of Wavemaker's animation capabilities.

It should be noted that if you're using LightWave 3.0 or later, you'll need 2MB of chip RAM to take advantage of Wavemaker's potential. While you can run the program and create the animation scripts with less memory, it is then necessary to exit Wavemaker to run LightWave. In addition, it's impossible to take advantage of some of the features (such as the storyboard) if both programs cannot run simultaneously. A chip RAM upgrade may also be necessary for those running LightWave on older systems.

All in all, Wavemaker is a very easy and useful program for creating flying-logo animations if you don't want to invest the time and effort needed to master LightWave.

—Dave Thomas ►

TENEX The Hot Spot To Shop!

Lowest Prices Guaranteed!

AMIGA Hardware

A500 UPGRADES

GVP A500 IMPACT SERIES II HARD DRIVE		
A500-HD8+0MB/120II	C10039	$379.00
1MBYTE x 8 x 80 SIMMs	93693	$84.99
BIG FOOT POWER SUPPLY	92898	$89.99

A500 Memory/Accelerators/Enhancements

SUPRATURBO 28	D10047	$145.00
SUPRARAM 500 RX		
500 RX with 1MByte	94016	$124.95
1MByte Upgrade Kit	97312	$64.95
SUPRARAM 500 RX		
500 RX with 2MByte	94029	$164.99
2MByte Upgrade Kit	97278	$99.95

A1200 UPGRADES

A1230 TURBO+ Series

40Mhz	D12121	$499.00
50Mhz	D12132	$679.00

A1200 Memory/Accelerators

12 A'CLOCK	C15509	$27.99
DKB 1202	D10373	$159.00
TWELVE GAUGE 50 MHz	C10998	$399.95
SUPRATURBO 20	D10405	$599.99
MICROBOTICS Expansion Boards for the A1200		
No FPU with Clock	C15195	$139.99
14 MHz with Clock	C15203	$129.00
25 MHz with Clock	C15227	$198.00
50 MHz with Clock	C15234	$339.99
FASTRAM IC 1MB	D10240	$74.99
FASTRAM IC 2MB	C15519	$119.99
FASTRAM IC 3MB	D10254	$169.99
FASTRAM IC 4MB	C15527	$199.99

DATAFLYER XDS 100MB	D11291	$249.99
DATAFLYER XDS 130MB	D11301	$279.99
DATAFLYER XDS 200MB	D11315	$309.99
DATAFLYER XDS 340MB	D11329	$429.99

A2000 UPGRADES

G-FORCE 040—33MHz 68040 Accelerators		
A2000 040-33/33/4/170	D10631	$1249.00
G-FORCE RAM, 1MB 60ns	C10076	$89.95
G-FORCE RAM, 4MB 60ns	C10089	$229.99
EGS-28/24 Graphics w/1MB	D11984	$429.99
EGS-28/24 Graphics w/2MB	D11995	$499.99
TBCPlus with SMPTE	D12109	$899.00
TBCPlus without SMPTE	D12112	$759.00
BIGFOOT 2000 Power Supply	D10068	$129.99

A2000 Memory/Enhancement

1MByte x 8 x 80 SIMMs	93693	CALL
SUPRATURBO 28 for A2000	D10054	$149.99

A3000/A4000 UPGRADES

DATAFLYER 4000SX	D11105	$99.99
DATAFLYER 4000SX-25	D11118	$104.99
DAYAFLYER DF4-DB25 CABLE KIT	D11120	$9.99

MODEMS & FAXES

SUPRAMODEM 2400	96667	$69.99
Modem Serial Cable	A42447	$12.95
SUPRA FAX/MODEM EXTERNAL		
FAX/Modem, v.32bis	97154	$249.99
TERMINUS Modem Software	D11192	$4.99
BOCA HIGH SPEED FAX/MODEM		
Boca V.32, 14.4 Modem External	A73603	$$169.99

AMIGA VIDEO HARDWARE

VIDEO TOASTER 4000	D10728	$CALL
VIDI AMIGA 12	C11625	$129.99
VIDI AMIGA 12 RT	D10034	$189.99
VIDI AMIGA 24 RT	D14942	$359.99
AC ADAPTER (Required for Vidi Amiga 12RT & 24RT)	90441	$9.95

PRINTERS

CANON		
BJ-200E	H21402	$299.99
BJ-600C	H11757	$589.99
STAR		
NX-1001	90895	$136.99
NX-1040 Rainbow	C12275	$164.99
NX-2450 Rainbow	H15448	$229.95
NX-2480 Rainbow	H15453	$269.99

AMIGA INPUT DEVICES

AMIGA OPTICAL MOUSE	D13590	$39.99
MEGA MOUSE	D13651	$16.99
AMIGA MOUSE	D14513	$19.99
400DPI HAND SCANNER	C12638	$149.99
EPSON ES600 SCANNER	C15480	$799.00
ADDPRO ESPSON ES DRIVER (Required for the ES600 Scanner)	C15368	$119.99
IBM JOYSTICK INTERFACE	C15532	$13.99
IBM BUS MOUSE INTERFACE	C15586	$13.99
MIGRAPH OCR Software	C13626	$259.99

FLOPPY DRIVES

A500 INTERNAL Floppy Drive	D13700	$59.99
A2000 INTERNAL Floppy Drive	D13714	$59.99
A3000 INTERNAL Floppy Drive	D13722	$59.99
EXT. for All AMIGAS	D13730	

HARD DRIVES

We carry a complete selection of IDE Hard Drives from Quantum and other fine manufacturers. Call for latest models and prices!

Description	MByte	W	H	Access Time	IDE Drives TENEX Part #	TENEX Price
3.5" Hard Drives						
Quantum EIS/127AT/EIS127S	127	3.5"	1"	17ms	C11780	$179.99
QuantumEIS/170AT/EIS170S	170	3.5"	1"	17ms	C11790	$199.99
QuantumQTM525AT/QTM525S	540	3.5"	1"	10ms	A96242	$649.00
Western Digital AC2340	340	3.5"	1"	12ms	A82784	$279.00
2.5" Hard Drives						
Seagate ST9235 *Limited Quantities!*	200	2.5"	.75"	16ms	H21204	$359.00
Quantum GO/40/AT	40	2.5"	.75"	17ms	C15329	$69.99
Quantum GO/60/AT	60	2.5"	.75"	17ms	A93535	$89.99

AMIGA Software

AMIGA VIDEO SOFTWARE

CALIGARI 24	C13760	$239.99
CINEMORPH	C12922	$59.99
DELUXE PAINT IV	94997	$107.95
DELUXE PAINT IV	C13277	$124.99
IMAGE F/X v1.5	D11461	$239.99
VIDEO DIRECTOR	96170	$133.99

AMIGA MUSIC & SOUND

OCTAMED PRO 5	D12349	$49.99
THE COPYIST	90700	$219.99
DIGITAL SOUND STUDIO 8+	D10446	$99.99
DELUXE MUSIC II	C15437	$79.99
MIDI INTERFACE	C10669	$34.99

AMIGA UTILITIES



AMI-BACK v2.0	94057	$44.95
AMOS PRO COMPILER	D10269	$39.99
AMOS PROFESSIONAL	D10279	$74.99
SimCDFS (CD-ROM file mgmt.)	D12257	$49.99
DIRECTORY OPUS	C14894	$59.99
QUARTERBACK	C10964	$41.99
QUARTERBACK Tools Deluxe	D10380	$64.99
SAS/C COMPILER	C12252	$234.99

PRESENTATION SOFTWARE

SCALA MM210	D10980	$299.99
BROADCAST TITLER Hi-Res	D10292	$239.99
THE ANIMATION STUDIO	90126	$42.99
ESSENCE	C14904	$49.99

GRAPHICS & PUBLISHING SW



✪ PROFESSIONAL PAGE 4.0	98154	$109.99
✪ PROFESSIONAL DRAW 3.0	C12064	$109.99
Page4.0/Draw 3.0 bumdle	C12072	$179.00
✪ ART DEPT. PROFESSIONAL	92135	$147.99
Conversion Kit	92149	$52.95
✪ BRILLIANCE	C14883	$139.99
BUSINESS CARD MAKER	96039	$39.95
COLORMAGIC CD-ROM (clip art)	D10360	$34.99
COMIC SETTER	81815	$19.99
IMAGEMASTER	D10186	$134.99
IMAGINE 2.0	90166	$174.99
MOVIE SETTER	81824	$19.99
PERSONAL PAINT	D11162	$72.99
PIXEL 3D PROFESSIONAL	C14870	$139.99

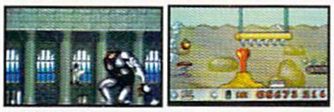
EDUCATIONAL SOFTWARE

AMY'S FUN-2-3	C11581	$29.99
BRIDGE 6.0	96218	$24.99
DINOSAURS ARE FOREVER	83134	$14.95
DISCOVERY	D10167	$24.99
MERLIN'S MATH	D11809	$26.99
PAINT & CREATE	D11794	$26.99
SCRABBLE	84567	$17.95
CARMEN SANDIEGO TITLES:		
WHERE IN EUROPE?	89179	$29.99
WHERE IN TIME?	91005	$29.99
WHERE IN THE USA?	86677	$29.99

AMIGA PRODUCTIVITY

EASY AMOS	C14913	$34.99
FINAL COPY II	C12807	$79.99
FINAL WRITER	D13547	$124.99
GOLD DISK ALL-IN-ONE	D10318	$14.99
MAXIPLAN 4	C11379	$99.99
MAVIS BEACON	D10987	$38.99
PHASAR	C11079	$49.99
PROPER GRAMMAR	94440	$51.99
PROWRITE 3.3	88222	$54.99
SBASE PERSONAL 4	D12067	$99.99
SUPERBASE 4 PRO	C14194	$169.99
T-REXX PRO	D12070	$134.99

ENTERTAINMENT



BLACK CRYPT	96283	$31.95
BLASTAR	D11338	$49.95
BODY BLOWS	D10122	$39.99
CASTLES	94877	$34.95
DARKSEED	C13787	$39.99
DESERTSTRIKE	C13304	$31.99
DUNE II	D10758	$36.99
Dungeon Master/Chaos Strikes	C12772	$29.99
GUNSHIP 2000	D10541	$39.99
HEIMDALL	C12387	$19.99
HIRED GUNS	D10238	$34.99
LEMMINGS	92226	$27.95
LEMMINGS II THE TRIBES	C15332	$34.99
MANIAC MANSION	D10978	$19.99
MANSELL'S WLD. CHAMP.	C15029	$36.99
✪ MANSELL'S AGA VERSION	C14118	$36.99
MONOPOLY	84552	$29.95
POPULOUS II	96271	$38.95
POWERMONGER	90767	$31.95
SIMEARTH	C11857	$29.99
SLEEPWALKER	D10146	$46.99
WARLORDS	C13908	$34.99
✪ ZOOL (For A1200 and A4000)	C15118	$36.99

UNBELIEVABLE SPECIALS!

LIMITED QUANTITIES!

ACT NOW TO TAKE ADVANTAGE OF THESE SPECIALS

DATA FLYER		
2000 SCSI CLLR	99058	$59.00
500 SCSI CONTROLLER	99062	$99.00
RAM 0K	99078	$69.00
FIRECRACKER 24-BIT CARD	97281	$699.00
IRMA BOARD E-78	A98153	$199.00
BLIZZARD BD 14 MHZ 0MB	C10908	$189.00
500XP DRIVE KIT	C13878	$189.00
500XP 2MB RAM KIT	97263	$59.00
POWER PC BOARD	96620	$199.00
GVP SIMM 32-1MB/40NS	C10092	$179.00
SUPRA 500XP W/2MB 120 MB	96643	$589.00
SUPRA 500 XP W/2MB 240 MB	96653	$799.00
GRAPHICS TABLET, W/G-WIZ SW	96489	$179.00
JOYSTICK NAVIG. BLK.	C10846	$9.99
A601 MEM EXP W/CLOCK	C13508	$59.00
PICTIONARY	90949	$5.00
THE COVENANT	D14898	$29.00
MUSIC LABS IFS	D11972	$32.00
AMOS-THE CREATOR	C14927	$39.00
UTOPIA	C11187	$24.00
THE ACCOUNTANT	82594	$119.00
THE PERFECT GENERAL	98779	$29.00
OPAL VISION	C11916	$359.00
VIDTECH SCANLOCK	93820	$649.00
A2000 COMBO 030-50/50/4/0	97568	$739.00

✪ Utilizes AGA

AMIGA is a registered trademark of Commodore Amiga, Inc., NOTE: Due to publishing lead-times, product prices and specifications are subject to change without notice. Returned software can only be replaced with the identical item. *APO, FPO, AK, HI, CN, VI, GU, and foreign orders are subject to additional shipping charges.

TENEX Computer Express

56800 Magnetic Drive, Mishawaka, IN 46545
(219)259-7040 FAX (219)259-0300

We gladly accept mail orders! Prices & specifications subject to change.

Order Toll-Free Nationwide

1-800-PROMPT-1

(1-800-776-6781)

Monday—Friday 8am—8pm • Saturday 9am—2pm (EST)

Shipping, Handling, Insurance Order Amount	Charge
Less than $19.99	$5.00
$20.00-$39.99	$6.50
$40.00-$74.99	$7.50
$75.00-$99.99	$8.50
$100.00-$149.99	$10.50
$150.00-$299.99	$11.75
$300 & Over	3.5% of Order

Circle 22 on Reader Service card.

X!Y

Mozart's Music Master

DevWare, **$49.95**

All Amigas.
1.3/2.0/3.0 compatible.
Hard-drive installable.
Not copy protected.
Accelerator compatible.
***Minimum system:* 1MB.**
***Recommended system:* 2MB, hard drive.**

Music training software.

OctaMED Professional 5

DevWare, **$69.95**

All Amigas.
1.3/2.0/3.0 compatible.
Hard-drive installable.
Not copy protected.
Accelerator compatible.
***Minimum system:* 1MB.**
***Recommended system:* 2MB, hard drive.**

Music composition software.

DevWare has been busy of late converting shareware into commercial software. The results of these efforts are apparent in both Mozart's Music Master and OctaMED Professional 5, two seasoned veterans of the public-domain music scene that are now distributed as commercial packages.

Mozart's Music Master: Interval Training

Mozart's Music Master (MMM) teaches and quizzes basic music harmony by providing ear-training and notation-reading exercises on the intervals of the octave. Contrary to the package blurb, it does not teach theory (except interval relationships) or meter. You will, however, find that the package provides a reference database of musical terms and symbols.

Along with a disk-based AmigaGuide manual, MMM presents two interface screens that test the recognition of intervals, as notated on a musical staff. A third screen is the database of terms and symbols, to which you can add new terms with accompanying definitions. Since this is, after all, instructional software, scores are kept, and the exercises can be timed. Sound samples are played to signify right or wrong answers, as well as for interval ear training.

The interface, while simple, is not consistent or logical from screen to screen. Although the program serves as a simple practice and test exercise, both it and the disk-based manual fall short of teaching the underlying significance of intervals and musical notation, so prior knowledge is required. Furthermore, the intervals taught don't extend beyond one octave, there are no voicing (note-order) variations, and no chords are presented. In my opinion, Mozart's Music Master needs significant improvement to justify its price.

OctaMED Professional 5: Modular Design

OctaMED, the long-time PD favorite, fares better with its newfound commercial status. Useful for creating songs, or music "modules," OctaMED lets you work with small blocks, or modules, of musical material. These contain all the information necessary for playback: instrument/sound samples, volume, duration, tuning, pitch, and play-order information. You enter notes using the Amiga keyboard, as standard notation on a musical staff, or through direct MIDI input. Although I don't know why anyone would actually do this, you can also enter notes as numerical data.

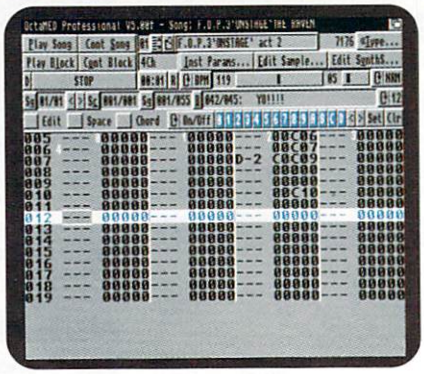
Playback is output through the



Even a maestro has to begin with the basics . . . and Mozart's Music Master aims to teach them.

Amiga's internal sound chips, MIDI instruments, or both. You can incorporate modules you create into games or presentations, or you can circulate them along with the included freely distributable and fully ARexx-accessible OctaMED Player.

The "Octa" in the program's name refers to its ability to play up to eight 8-bit samples at a time (with a maximum of 63 per song), as opposed to the Amiga's standard four. The trade-off is slightly degraded sound quality. Integrated into the program is a full-featured and easy-to-use sample editor,



Compose your tunes with OctaMED Pro 5.

along with a facility for creating and editing "synthetic sounds." These are waveform-based instruments, with a five-octave range (as opposed to sampled sound's three octaves) and economic memory requirements. In both editing windows, you can tune, stretch, affect, and generally massage the sounds into whatever shape you desire.

The songs, or modules, are themselves made up of smaller independent blocks containing note and instrument data. Using a play list, you create a song by arranging the blocks in any order you wish, with each block played once or a number of times, thus providing flexibility and memory economy. By varying the tempo and dynamics of each block, it is possible to make smoothly flowing and subtle songs, if that is your wish.

As with MMM, the manual is a disk-based AmigaGuide "help" feature that must be read outside OctaMED. Activated only when I booted from floppy, it proved to be fairly incomplete. Its most redeeming quality is the recommendation that you buy an additional package to obtain a full printed manual and tutorials!

Conclusions

While Mozart's Music Master might radiate brightly in shareware circles as a resource for learning the fundamentals of music, it's a profound weakling in the commercial arena. On the other hand, OctaMED should appeal to both new users and experienced composers. Musicians familiar with traditional sequencer and composition programs may find OctaMED Pro a tad limited, but it is nonetheless capable of worthy results. ■

—Michael Hanish

Software Hut

Commodore AMIGA

Folcroft East Business Park · 313 Henderson Dr · Sharon Hill, PA 19079

Info 610-586-5701
FAX 610-586-5706

Orders 800-93-AMIGA

Hours: Mon-Fri 9 to 6
Sat 10 to 4 - Eastern

800 Software Titles... IN STOCK - Call for FREE Software List • Call for Pricing and Availability
Full line of Hardware, Accessories & Peripherals.. IN STOCK • Call if you don't see what you want

Video Products

TV	$289.00
S Personal Animation Controller	Call
alVision (Comes w/Free Montage)	429.00
sonal TBC 4	829.00
asso 2Mb	529.00
ina 4Mb	529.00
cGen Plus Genlock	249.00
perGen SX	699.00
ster 3.1 Upgrade	549.00
ster Toolbox 4000	339.00
i 12 AGA	125.00
i Amiga 12 RT	259.95
i Amiga 24 RT	379.95
b	399.00
b Y/C	459.00
b External	479.00

HD Special

Alfa Power HD Systems
RAM to 8Mb • Case & Software
Same specs as GVP HC8 A500

Alfa Power w/60Mb HD $269.00
lfa Power w/130Mb HD $299.00
lfa Power w/250Mb HD $359.00

Additional RAM at $48. per Mb
d $10.00 for configurating & formatting

HD Floppies

DKB Power Computing
1.76Mb Capacity • 1 Year W'ty
Faster than Commodore's model
Requires OS 2.1 or higher
Internal - $159.00
External - $169.00
Commodore Models
Call to be placed on waiting list.

AMIGA

1Mb Agnus 8372A	$37.95
Super Denise 8373	28.95
CIA 8520 chip	8.50
Gary 5719 chip	13.95
Paula or Denise chip	18.95
1.3 ROM chip	21.95
2.04 ROM chip w/Wire	32.95
2.05 ROM - no wire	34.95
Super Buster Rev 11	54.95
Super DMAC Rev 4	54.95
W. D. SCSI Chip Rev 8	35.00
Ramsey Rev 7	49.95

wer Supplies & Expansion Boards

00 300W Power Supply	$149.00
lant Deluxe Emulator	379.00
ax 4, Color Mac Emulator	379.00
K Mac ROMs for A-MAX	199.00
Megachip w/2Mb Agnus	Call
3128 RAM Exp A3000/4000	319.00
4091 Z3 SCSI-2 Card	369.00
Lane Z3 SCSI-2/RAM A3/4000	519.00
tiface III I/O Extender	85.00
rize 16 Bit Audio Digitizer	1239.00
ra Turbo 28 A500 or A2000	159.00
cata 16	479.95

Accessories & Modems

len Image Amiga Mouse	$29.95
ra 2400 External Modem	69.00
ra Fax/Modem 14.4	225.00
ra Fax/Modem 28.8	369.95
ty 3 Button Mouse	24.00
Fax Software Specify Class 1 or 2	59.95

NEC CD-ROM Single/Double Blowout

Software Hut proudly presents Amigans an opportunity to enter the CD-ROM universe at an unbelievably low price. Have access to thousands of CD-ROM based Fish Disks, programs, clip art, fonts, photos, pics, & more. Compatible with all popular Amiga SCSI controllers.

- NEC CDR-25 Manf. for Media Vision
- Ext w/Power Supply, Headphone Jack
- Cabling for external 25 pin SCSI port
- Supports Single Session Photo CD
- Unispeed 650Ms Acc,.7Mb/s Transfer

$124.95

- NEC CDR-210 Internal CD-ROM
- Doublespeed 380Ms Access
- 1.5Mb/s Transfer Rate
- SCSI or SCSI 2 Connectability
- MultiSession Photo, Headphone Jack

$214.95

External model w/cabling
$319.95

CD-ROM Drivers

ASIM CDFS 2.0 w/Fish 1-910	$55.00
Xetec CDFS 2.0 w/Fish 1-950	55.00

Toaster Bundles

NEW LOW PRICING!
• A4000 040 25Mz
• 18Mb RAM & 345Mb HD
• Installation/Pretesting included
• Video Toaster 4000 v3.1
$4769.00
Toaster bundles starting as low as $3995. Call for custom configurations.

Hard Drives IDE & SCSI

3.5" SCSI Hard Drives

Quantum 340Mb HD	$359.95
Quantum 1.08Gig Empire LPS	859.00
Maxtor 120MB HD	185.00
Bernoulli Drives	Call
SyQuest 88/44 5110C HD	299.95
SyQuest 88Mb Cartridge	105.00
SyQuest 105Mb HD	359.95
SyQuest 105Mb Cartridge	79.95
NEW SyQuest 270Mb Removable	529.00
NEW SyQuest 270Mb Cartridge	129.95
Dual Bay External Case	109.00
Single Bay External Case	95.00

3.5" IDE Hard Drives

DataFlyer SyQuest 105 HD	339.00
Maxtor 345Mb HD	339.00
Seagate 260Mb 3290A HD	259.00
Micropolis 2210A 1Gig	849.00
Micropolis 2217A 1.7Gig	1195.00

2.5" IDE Hard Drives

Conner 40Mb HD	149.00
Conner 84Mb HD	225.00
Seagate 128Mb HD	289.00

If you do not see the drive you are looking for please call for availability.

A500 Peripherals

Big Foot 200W Power Supply	$86.95
Commodore A500 Power Supply	37.95
A500 Case complete w/shielding	23.00
A500 Internal Replacement Drive	49.95
A500 Keyboard	29.95
A501 512K RAM	Call
A520 Video Adaptor	19.95
RocTec External Floppy Drive	89.00
Alfa Ram 8Mb/2Mb Populated	149.00

A1200 Peripherals

CSA 12 Gauge 50Mz w/SCSI	$589.00
MBX1200z & M1230XA Boards	Call
DKB 1202 881 20Mz w/Clock	159.95
DKB - Other Configs w/Memory	Call
RAM - 1, 4, 8Mb for above	Call
DKB - The Clock for A1200	25.00
PCMCIA Card 600/1200 2Mb	139.95
PCMCIA Card 600/1200 4Mb	229.00
IDE Cable & Software - 600/1200	20.00
15-23 Pin Converter	17.95

GVP — NEW LOW PRICING

G-Force 040/33Mz/4Mb	$1049.00
G-Force 030/40Mz/4Mb RAM	649.00
G-Force A4000 040/40/40/4Mb	1489.00
GVP SIMM 32 4Mb 60Ns	225.00
GVP SIMM 32 16Mb 60Ns	1069.00
Spectrum 28/24 EGS 2Mb	399.00
G-Lock	349.00
GVP DSS8+ Sound Digitizer	89.95
Phone Pak v2	299.00
I/O Extender	109.00
1230 SCSI Ser2 40Mz 4Mb	499.00
1230 SCSI Ser2 50Mz 4Mb	599.00
FPU 50Mz for 1230 Accelerator	115.00
GVP 4008 SCSI Controller	149.00

Electrohome Monitors

In Stock: Electrohome 1440 MultiSync, .28dp, Auto-syncs to ALL Amiga resolutions including Super 72 • 1 Year Warranty
$499.00

1084S - *Call for Availability*
IDEK 17" Monitor, LP or SP
$989.00

Dr. T's Music Bundle

Includes KCS V3 & Copyist Apprentice
Originally sold for $469.00
Special Price $69.95

CBM Parts & Peripherals

A600/1200 Int. Floppy Drive	$69.95
A600/1200 Keyboard (Specify)	29.95
A2000/A3000 Keyboard	59.95
A4000 Keyboard	67.95
A2000 Complete Case NEW	59.95
A2000 Int. Floppy Drive	69.95
A3000 Int. Floppy Drive	69.95
A2000 Power Supply	109.00
A3000 Power Supply	109.00
A4000 Power Supply	89.00
CBM Amiga Model Mouse	18.00

Monthly Specials

Amiga 4000 040 Computer

Quantities are Limited.

A4000 040/25Mz/6Mb RAM: $1899.00

The following options include complete installation & testing at no additional charge. Your warranty stays in effect. No hidden charges at Software Hut.

250Mb Hard Drive - $259.00 • 345Mb Hard Drive - $339.00
540Mb Hard Drive - $489.00 • Each additional 4Mb Module - $169.00

A4000 040 LC Model

Call for configurations!
Available at a super price: $1679.00

A570 CD-ROM SPECIAL: $99.95

Brand NEW units • Last Month of Availability

Super Graphics Bundle

We have made a SPECIAL PURCHASE of:
TV Text Professional 1.0 & Deluxe Paint 3 v3.21
Great for the low-end video producer for titling, drawing, & animation. Originally sold for $299.00

Now Only $44.95

Commodore Closeouts

We have acquired a number of NEW products, which Commodore is closing out. Hurry as supplies are limited.

A520 Video Adaptor	$19.95
A2060 ArcNet Board	69.95
A2088 BridgeBoard - board only	20.00
A2320 DeInterlacer Board	129.95
A2620 020 Accelerator w/2Mb and Rev7 Eproms	199.00
AmigaVision v1.7	24.95
Appetizer Software Bundle	7.00
Tetris	7.00
Unix Upgrade Kit 2.1 (2 user)	99.00
Where in the World is Carmen	7.00

Amiga CD-32 $399.95

Includes: Sleepwalker & Pinball Fantasies

A4000-030/4Mb/130 HD
$1579.00

RAM & Other Chips
We stock all RAM chips, CPUs and FPUs. Please call for price.

WB2 Upgrades

DOS 2.1 Kit w/ROM	$77.95
2.1 Enhancer - no ROM	44.95
A2620/A2630 Eprom Kit	35.00
Multi-Start 2 v6A 500/600/2000	34.00
A2091 Rev 7 Eprom Kit	32.00
AS217 Enhancer Docs for A1200	23.95

A1000 Parts

A1000 Internal Floppy Drive	$59.95
A1000 Keyboard	49.95
A1000 Case w/Shielding	29.95
A1000 Motherboard	49.95
A1000 Daughterboard	24.95
A1000 Power Supply	39.95
A1050 256K RAM Expansion	35.00

Last Chance on some of the above parts. Get a spare while supplies last.

Our Policies

No waiting for your orders to ship. Orders in by 2PM go out the same day. Second Day & Overnight shipping is available. International orders are shipped by Air Parcel Post, UPS or DHL. Domestic orders are shipped UPS.
• All orders are subject to credit card verification •

VISA · MasterCard · DISCOVER

Due to ad schedules, all prices are subject to change. We accept Visa, Master Card, and Discover. We also ship COD, accepting Cash, Certified Check, or Money Order. Minimum COD order is $50.00. Software and accessories shipping is $6.00. Hardware shipping is $6.00 for small items, $15.00 for Monitors. Call for larger items. COD add $5.00. Canadian, APO, & International orders are welcome. We will bill only for actual shipping charges & insurance at time of order. 15% re-stocking fee on all returns not exchanged for another item. Shipping charges are NOT refundable.

© Copyright 1994, techWriters Inc. All Rights Reserved

Circle 88 on Reader Service card.

Explore New Dimensions of Amiga Excitement With AMIGA WORLD



Save yourself time, money and frustration with AmigaWorld*'s up-to-date reviews of the latest hardware and software... time saving graphics and animation tutorials... in-depth reports on the best productivity software... gaming tips... and practical solutions for hardware compatibility challenges. Send for your* AmigaWorld *Subscription today!*

• SAVE 54%! • SAVE 54%! • SAVE 54%! •

AMIGA WORLD

100% MONEY BACK GUARANTEE

If at any time during your subscription, you decide that *AmigaWorld* doesn't live up to your expectations, you can get a complete refund of every single cent you've paid — no questions asked!

YES! Rush me my 1 year subscription plus my FREE SAMPLER DISK.

Bill me later for 11 additional issues (a total of 12 in all) for just $19.97 plus $2 postage and handling. I save 54% off the annual single-copy price! I understand that my satisfaction is guaranteed during the entire term of my subscription — or my money back!

Name ____________________

Address ____________________

City ____________________ State ________ Zip ________

Allow 4-6 weeks for delivery. Foreign orders must be prepaid in U.S. Funds from a U.S. bank. Canada $33.00 (includes GST): Mexico $30.97: Foreign Airmail $81.97. All rates are one year only.

FREE SAMPLER DISK

Get a FREE Sampler Disk filled with valuable Amiga utilities and programs with your order!

MAIL TO: *AmigaWorld*, P.O. Box 595, Mt. Morris, IL 61054. Or for faster service, call 1-800-827-0877 or FAX 1-603-924-4066

Amiga is a trademark of Commodore-Amiga, Inc.

A47A4V

TO ORDER CALL 800-544-6599

MON.-FRI. 9-6, SAT. 9-5 CST

CUSTOMER SERVICE 414-548-8125 • FAX 414-548-8130

MasterCard · VISA · DISCOVER NOVUS

ENTERTAINMENT

Apocalypse	34.99
Award Winners 2	38.99
Beneath a Steel Sky	41.99
Blue & The Gray	39.99
Brutal Sports Football	34.00
Darkmere	37.99
Fighter Duel Pro II	40.99
Hired Guns w/ 4-Player Adaptor	26.99
Mortal Kombat	28.99
Pinball Fantasies	34.99
Settlers	40.99
Star Trek 25th AGA	37.00
Zool 2	34.99

PRODUCTIVITY-UTILITIES

AmiBack 2.0	49.99
AmiBack Plus Tools	78.00
AMOS Pro Compiler	41.00
Art Department CGM Loader	54.99
B.E.S.T. Accounting	133.00
Batch Factory	37.99
C Net 3.0	124.00
Caligari24	133.00
Caligari Broadcast 3.0	299.00
Crouton Tools 4000	91.99
Directory Opus 4.1	62.99
Disk Expander	37.99
Dynamic Motion Module	129.00
GFX Cad 3000	419.00
ImageMaster RT	82.99
Imagine 3.0	365.00
Magic Lantern	59.99
Pegger	73.00
Pro Conversion Pack	55.00
QuarterBack 6.0	62.99
QuarterBack Tools Deluxe	76.99
Real 3D 2.0	383.00
SAS/C Development	253.00
Sparks	90.99
Studio Print	66.99
SuperBase Professional 4	189.00
Swipes	82.99
Toaster Toolkit 4000	119.00
TRexx Pro	153.00

TOP 10

1	Art Department Pro 2.5	143.00
2	GP FAX Generic	62.00
3	ASIM CD ROM FS	55.99
4	Blitz Basic 2	89.00
5	Global Domination	30.99
6	Final Writer II	120.00
7	AMOS Pro Compiler	41.00
8	Frontier: Elite II	35.99
9	Final Copy II	59.99
10	Ultimate Mod Collection	24.00

HARDWARE

4091 SCSI-2 Controller	299.00
Accelerator, Warp Engine 4040	1449.00
AD 516	1199.00
AMAX IV	374.00
AmigaLink Starter Kit	255.00
Floppy Drive, High Density Ext	160.00
Monitor, IDEK 17"	979.00
OpalVision	395.00

ALFA DATA®

Tandem CD Controller	99.99
With Mitsumi FX001-D CD ROM Drive (2x)	299.00
AlfaDrive 3.5" Floppy	75.99
AlfaScan Plus 400 DPI Scanner Includes Touch-Up	189.00
AlfaColor Hand Scanner	299.00
CD12000 Mitsumi CD ROM controller for the 1200	Call
Oktagon 2008 SCSI-II RAM Expansion Card	139.00
MultiFaceCard III I/O Card	99.00
Mega Mouse 400 DPI	25.00
Mouse/Joystick Switch	22.00

LOOKING FOR SPACE? We have harddrives!

Quantum™ · MICROPOLIS · Maxtor · Seagate · EXABYTE®

MODEMS

NEW LOWER PRICES

Supra Corporation

SupraFAX Modem 14.4 Ext	189.00
SupraFAX Modem 14.4 LC Ext	155.00
V.FC 28.8 Ext	295.00

USRobotics

Sportster 14.4 Ext	159.00
Sportster 14.4 Ext FAX	169.00
Courier V.32 Terbo Ext FAX	389.00

MIGRAPH INC

ColorBurst Color Scanner	449.00
ColorBurst w/OCR Jr.	479.00
Scanner, B/W 400 DPI	199.00
Scanner, B/W w/OCR Jr	239.00
Scanning Tray w/ Merge	89.00
Migraph OCR Software	145.00
Migraph OCR Software Jr	95.00
MS 1200 Color Flatbed	864.00
MS 2400 Color Flatbed	1084.00

EXPANSION SYSTEMS

DataFlyer 105AT/Syquest Int	399.00
DataFlyer 105S/Syquest Int.	464.00
Extra Cartridge	69.00
DataFlyer 500/8	199.00
SCSI+1200/4000	119.00
XDS/1200	74.00

Personal Anim Recorder	1599.00
Personal Component Adapt	259.00
Printer, Primera	759.00
SuperGen SX	690.00
Tape Drive, Archive 250	364.00

AXIOM SOFTWARE

ANIM Workshop 2.0	82.00
Pixel 3D 1.0	82.00
Wave Maker	124.00
WaveLink	79.00



We are proud to be a Partners Plus Dealer. Visit our store!

NEWTEK INCORPORATED

CD ROM DRIVES & TITLES

Chinon 535 CD ROM Drive Int	379.00
Chinon 535 CD ROM Drive Ext	489.00
NEC 3x Bare Drive	479.00
NEC CD38 Ext	289.00
NEC 3x Int	489.00
NEC 3x Ext	589.00
NEC 4x Ext	995.00
NEC 3xp Portable	469.00
Texel 3028 Int	315.00
Texel 5028 Ext	425.00
Toshiba 3401B Int	399.00

* * * * * * * * * * * * * *

3D ROM (3D Models)	185.00
ASIM CD ROM FS 2.0	52.99
AmiNet 2/94	21.99
Clipart Warehouse	20.00
Cookbook Heaven	14.00
Elysian Archive	18.99
Fantazia Fonts	32.00
Fred Fish Reg 1.7	20.00
GIFs Galore	18.99
Project Gutenberg	27.00
Texture City CD	120.00
Texture Heaven CD	55.99
Ultimate MOD Collection	22.99

Micro R. & D.

Fontasia 300 Outline fonts for use with WB Disk box included	59.00
MIDI Cable	10.00
MIDI Interface	42.00
Modem, 14.4 FAX including GP FAX	275.00
Mouse, Swifty 3-Button	29.00
Power Supply 2000	155.00
Transition	47.00

Terms: POs accepted from schools and government agencies • Personal checks require 7 days to clear • Defective products replaced promptly. RMA number required (call 414-549-8125) for all merchandise returns. Returns not accepted after 15 days. Returned products must be in original packaging, postage prepaid. Opened software not returnable. Shipping charges not refundable. Non-defective returns subject to a 15% restocking fee • Not responsible for typos. Prices subject to change.

SAFE HARBOR COMPUTERS

2120 E. MORELAND BLVD. SUITE L, WAUKESHA, WI 53186

Circle 44 on Reader Service card.

The Game Preserve

By Peter Olafson, AW Games Editor

Apocalypse

A–
1.3 ✓
2.0 ✓
3.0 ✓
Not hard-drive installable.
Copy-protection.

Second Samurai

B+
1.3 ✓ ✻
2.0 ✓ ✻
3.0 ✓ ✻
Not hard-drive installable.
Copy-protection.

Turrican 3

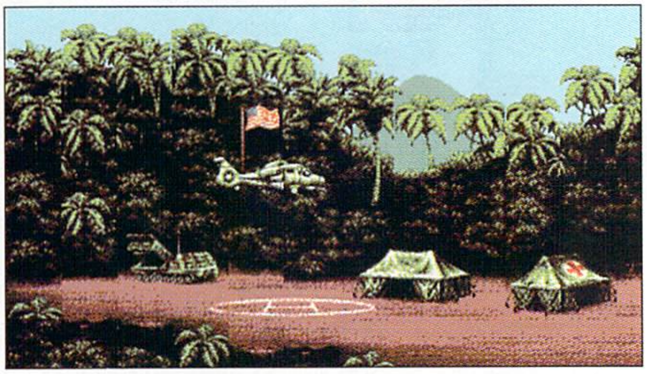
C
1.3 ✓
2.0 ✓
3.0 ✓
Not hard-drive installable.
Copy-protection.

You may have noticed that I don't do many full reviews of arcade games. (They usually get stuck in Short Takes or AGA Games.) It's not that I don't like them—on the contrary, I love 'em—but they tend to be of a type. And frankly, there is only so much one can write about a cartoon character blasting other cartoon characters to kingdom come or hopping between platforms before the reviews start to sound alike.

However, periodically, a number of long-awaited releases will arrive in close formation. That happened again in late winter and early spring, and the best of the bunch are so good that it would be hard not to take notice.

For starters, there's Apocalypse. If you've ever mourned the absence of an Amiga version of Choplifter, you can doff the black veil, start dating again, and run the flag back up to full mast, for this ***Virgin UK*** release (about $35) is a heroic rendition of that 8-bit chestnut.

You fly your Apache helicopter from right to left across an olive-drab jungle, blowing the bejesus out of buildings to permit POWs (and, regrettably, enemy troops) to escape. You lay down suppressing machine-gun fire to knock down the inevitable handheld rocket launchers—the little enemy soldiers die acrobatically in the fashion of Cannon Fodder's—land (softly, softly), wait for the little men to board, and then skedaddle back to base, avoiding the dogs of war (enemy choppers, artillery fire, and undetected enemies). And once you've found and rescued the required numbers of POWs, it's on to the next level. What a great game! The levels are conceived more like missions; there's a theme (and a trick) to solving each of them. The designers have made good use of various special-purpose weapons—rockets and firebombs, for instance—to give the game greater depth (and not simply more ordnance). They've made the scenarios more rational: If you land at the tent, you'll be joined by an evac team that will ferry out wounded soldiers. They've gotten a good use out of 32 colors without sacrificing the hothouse atmosphere or allowing the chopper to get lost against the trees. A superb job by Miracle Games, which inherited the game near its completion. How's Dick Special coming, guys?



Free POWs with an armed Apache helicopter in Apocalypse.

Next up is Second Samurai (***Psygnosis***, about $35)—the sequel to, uh, First Samurai. But first, a word about First Samurai, if I may. It was a Mirrorsoft product that died off not long after its release. This was a side-scrolling beat-'em-up without rival—one of those almost magical instances where sound, art, and gameplay are synthesized into a whole greater than the sum of its parts. There was other-worldliness to the graphics. (Remember the UFO-behind-hill effect in the "Lost in Space" episode set in a parallel "negative" dimension?) The death of enemies was accompanied by orchestral flourishes; grabbing powerups were answered by a heavenly choir; and a mournful song played as your character's soul swirled back to its "last save." It was a strange and wonderful game—the sort you can put your heart into because it seemed to give back a piece of its own.

Ahem. Enough about the original. Author Mev Dinc seems to have answered the inevitable "How do I top this?" question with "bigger and better." Well, that's one answer, anyway, and we get right into the fray in Second Samurai. Boss-type monsters of intermediate size and elaborate special effects are distributed liberally about this landscape. Indeed, it often seems that's all there is—that the game moves only from climax to climax. (The A1200/4000 version—Psygnosis' first disk-based venture into AGA—is likewise very nice, but I had to physically remove my '030 accelerator and extra memory from the A1200's trapdoor to get it to run—a telltale sign of careless coding.)

However, while going over the top here, Dinc has forgotten to allow gamers a chance to breathe between those cli- ►

A—Wow! Exquisite. A must for your games library.
B—Great fun. Plenty of entertainment value here.
C—Meets expectations. Good, solid performer.
D—Disappointing. Lots of room for improvement.
F—A real stinker. Don't waste your time.
✻ You may encounter some problems under this operating system and/or require a PAL/NTSC adapter.

ORDERS (800)220-2224

INFO: (212) 633-2290
FAX: (212) 633-7717
FAX US YOUR ORDER OR INQUIRY
ESTABLISHED 1977 SE HABLA ESPANOL

We Ship Worldwide!

To our valued customers:
Despite recent events in the industry, Tristate would like to assure our customers that we are committed to the Amiga platform and believe the technology will continue on in the hands of third parties, perhaps even stronger than before.

MON-THURS 9:00-6:00 FRIDAY 9:00-2:00 SUNDAY 10:00-5:00 SATURDAY CLOSED
COME VISIT OUR NEW SUPER STORE
15 YEARS OF EXPERTISE & SERVICE
TRI STATE COMPUTERS
650 6TH AVENUE, (COR. 20TH ST) NY, NY 10011

"Your Video Toaster - Commodore Amiga Headquarters"

NEW! Epson ES600C
24 Bit Color Scanner
$719.95
ES800C $1029.95

Emplant
The Ultimate Mac Emulator
$339.95

Editizer
True A/B Roll • Multi Format Editor
Toaster Control • DPS TBC Control
LOWEST!!
free cables!! free cables!!

Authorized Amiga Service Center
Bring or mail in your equipment for in & out of warranty work. Factory trained technicians

COMPLETE TOASTER 4000 WORKSTATIONS ON SALE NOW!

A4000 030-25
120 Meg HD
Toaster 4000 W/ New 3.1
10 Meg Ram Memory
Set Up & Install
GOOD
$CALL

A4000 040-25
120 Meg HD
Toaster 4000 W/ New 3.1
14 Meg Ram Memory
Set Up & Install
$4595
GREAT

A4000 030-25
240 Meg HD
Toaster 4000 W/ New 3.1
18 Meg Ram Memory
Set Up & Install
$CALL
BETTER
This system has more storage & memory for more involved applications

A4000 040-25
640 Meg HD
Toaster 4000 W/ New 3.1
18 Meg Ram Memory
Set Up & Install
$5295
The best of all available resources! Further additions are possible. Please call to Discuss.
3D ANIMATOR'S DREAM SYSTEM!



Ask about our monitor specials when ordering!!

KITCHEN SYNC
Two Channel TBC
$1169.95
GOLDEN GATE 386sx $434.95

CSA Twelve Guage!
KILLER Power for your 1200!
68030@ 50mhz
Opt '882@ 50mhz
Up to 32MB Ram
Built in fast SCSI
Networking Soon!
$524.95

AUTHORIZED COMMODORE AMIGA DEALER

Software

Final Copy 2.0	69.95
Pagestream 2.2 (3.0)	164.95
Art Dept Pro V2.5	148.95
SAS Lattice C. V6.0	224.95
Imagine 3.0	399.95
Amax IV	CALL
Deskjet 550c Driver	39.95
Toaster F/X	129.95
Real 3D V2.0	379.95
Pixel 3D Pro	79.95
Imagemaster	118.95
Morph Plus	139.95
Playmation	344.95
Interchange Plus 3.0	59.95
Montage	319.95
Trexx Pro 2.0	129.95
Montage 24	264.95
Montage Postcript	CALL

Due to ad production schedules, our prices may actually be lower than advertised!

TBC's & Genlocks

Personal TBC III	669.95
Little Magic Box	579.95
DPS Pers VScope	699.95
Hotronics AP 41	789.95
Hotronics AP 41 SF	1099.95
The Personal SFC	339.95
GVP G-Lock	374.95
Supergen SX	619.95
Pri Imge Std Con	1449.95

DIGITAL PROCESSING SYSTEMS INC.

Pers TBC IV	779.95
Pers Anim Rec	$1584.95
Pers Comp Adapt	429.95

NEWTEK INCORPORATED
Toaster 4000 Pal Adaptable!
1889!





A1200 $429.95
CD-32 CALL

60 MEG 2.5" IDE	$CALL
120 MEG 2.5" IDE	$189.95
240 MEG 2.5" IDE	$379.95

Drives

Bernouilli 150 Int Drive	449.95
Bernouilli 150 Ext Drive	549.95
Syquest 200 Meg Int Drive	429.95
Bernouilli 88 Meg Carts F/ Syq	89.95
Bernouilli 44 Meg Carts F/ Syq	69.95
Ext Chassis & Power Supply	89.95
Micropolis 520 Meg ide	CALL
Micropolis 1 GIG ide	799.95
Micropolis 1.7 Gig ide	1199.95
Micropolis 1 GIG AV SCSI	949.95
Micropolis 1.7 Gig AV Scsi	1499.95
West Dig 340 Meg ide	319.95
West Dig 420 ide	369.95
Quantum 240 Meg Scsi	289.95
Quantum 340 Meg Scsi	329.95
Quantum 1 GIG Scsi	779.95
Seagate 1.2 Gig Scsi	899.95
Seagate 2.2 Gig Scsi	1699.95
Seagate 3.5 Gig Scsi	2199.95
Seagate ST3655a	499.95
Pana Mag Opt Drives	CALL

Multimedia Center

Toshiba 3401B Internal	319.95
Toshiba 3401B External	429.95
NEC Multispeed 3xi	479.95
Texture Heaven CD	59.95
All CD related	Call

COME IN FOR A DEMO!

OpalVision
Seeing is Believing
24-bit Video & Graphics System
New Version 2.0

THE VIDEO PROCESSOR IS HERE!!

Special Offer: Purchase an Opalvision Main Board Between May 1, and June 30 and get Montage AGA Absolutely *FREE!!!* That's like getting Opalvision for *$99.00!!*

Look ▶ Main Board Now Only
389.95!!!

Peripherals

SYNC STRAINER !!!	54.95
Y/C Plus (Toaster)	699.95
Trimedia Drawing Tablets	CALL
Boca Ext. 14.4 Fax/Modem	***149.95***
Wavetools 16 bit sampler	CALL
Video Slot Box	CALL
CSA Twelve Guage 33 MHZ	388.95
CSA Derringer A2000 25 MHZ	299.95
Wacom Tablets (all)	CALL
Fastlane Z3 Scsi II/RAM	489.95
Optical Mouse	34.95
Multiface III	89.95
One Stop Music Shop	499.95
Mac Roms F/ Amax II Plus	94.95
AD 516 w/ Studio 16	1149.95
AD 1012 W/Studio 16	CALL
Triple Play Plus	164.95
DKB Megachip 2000	194.95
DKB 3128 Ram BD	CALL
DKB 1202/20 mhz Mem BD	139.95

AD-516 Sunrize Industries
Now on Sale!

AD 516 (DIG AUDIO)	$1149.95
AD 1012 (12 bit)	$CALL
All Acsry for AD 516	$CALL

Software

Amiback 2.0	39.95
Amiback Tools	49.95
Brilliance	124.95
Image F/X 1.5	224.95
Disney Animation	69.95
Gigamem	CALL
Aladdin 4D 3.2	CALL
Art Expression	139.95
Final Writer II Rel II	CALL
Hotlinks Editions	74.95
Morphus	Call
Vistapro 3.1	59.95
Dpaint 4.6 AGA	119.95
Dr. T's Level II KCS	229.95
Directory Opus 4.0	59.95
Wavemaker	139.95
Deluxe Music 2.0	94.95
Gold Disk Office	79.95
Procalc II	119.95
Distant Suns 5.0	59.95
Anim Workshop II	89.95
Pixel 3D PRO II	69.95

Monitors Printers

Commodore 1942	CALL
Commodore 1084s	CALL
IDEK 5017 sp	949.95
Electrohome 14"	CALL
IDEK 5021	CALL
NEC MS 3FG/4FG	Call
Canon BJC 600 16.7 million Color!	579.95!
FARGO PRIMERA	679.95
Dye-Sub for FARGO	189.95

TRI STATE COMPUTERS
Will not be undersold!
Call if you need a price beat

Tristate is a full service dealer for pros and amateurs alike. We carry everything in Video and Editing

GVP Authorized Dealer
Lowest Prices Guaranteed!

Combo 040-33mhz/4/0	1049.95
GVP I/O Extender	129.95
A4000-40mhz 040	CALL
TBC Plus	774.95
TBC Plus Remote	CALL
Simm32 1mb	64.95
Simm32 4mb	CALL
Simm32 16mb	CALL
A1230 no FPU,0k	399.95
A1230 w/FPU,4M	544.95
Phone Pak VFX	289.95
DSS8 + Sound Studio	88.95
Image F/X 1.5	219.95
A4008 SCSI	149.95

Macrosystems Dealer

VLAB Int Comp	379.95
VLAB Int Y/C	439.95
VLAB External	439.95
Retina 2 MB	489.95
Retina 4 MB	519.95
Retina 4 MB w/ TV PAINT	699.95
Retina Z-III	Call
Toccata 16 bit	Call
Warp Engine 040--40mhz	1499.95
Warp Engine 040-4000-28	Call
Sparks Animation	Call
Multiframe Adpro	Call
TVPaint 2.0 Pro	Call
Studio Printer Driver	59.95

AmiLink CI
Editor Headquarters

CI/P A/B Roll	$1995
CI Cuts Only	CALL

NEWTEK Authorized Dealer

Prime Image Dealer

We also carry a full line of Cameras, IBM Computers and related Multimedia, Faxes Darkroom, Video and More

24 Bit Display Enhancements

Merlin 4mb	739.95
IV-24 24 bit Graphics	1049.95
Piccolo	CALL
RGB for DCTV	CALL
DCTV	274.95
EGS Spectrum 1 meg	465.00
EGS Spectrum 2 meg	539.95
EGS Spectrum 110	CALL
Picasso 1 meg	424.95
Picasso 2 meg	499.95

Call us to help design your 3D Animation Solution Bringing it to Hollywood!

3D Professional Section

Essence Vol I, II	CALL
LightRave 3.1	359.95
Ethernet Solutions	CALL
Tapeworm	84.95
Parnet with Cable	37.95
Wedding Collection	69.95
Dynamic Motion	CALL
ADP Tools Pro	119.95
Imagemaster R/T	79.95
Humanoid	129.95
The Cathedral	59.95
Sparks	CALL
The Jurassic Collection	89.95
Multiframe	119.95

VISA DISCOVER MasterCard COD Accepted. Overnight shipping available. 15 Day Money back guarantee. All Merchandise brand new factory fresh. Custom Configurations our specialty. Prices subject to change without notice. Not responsible for typographical errors. Extended Warranty Available U.S and Canada.

Circle 71 on Reader Service card.

maxes. And he has, I think, unintentionally made Second Samurai more like other games of its type. Perhaps it was a one-time only sale, but the priceless quality that First Samurai had seems to have simply disappeared. I'll enjoy this new game, which is a technical marvel and very playable, but I'll miss its brother's endearing uniqueness.

Magic is hard to repeat, and sometimes age gets in the way, anyway. Remember Turrican and Turrican 2? You could scarcely forget them. Around the turn of the decade, those two elemental games helped establish the Amiga as the platform for platformers. But in the early '90s, Turrican 3: The Final Fight languished in the vault when German publisher Rainbow Arts fell on hard times, and while there has been occasional chatter about it surfacing, the game never materialized.

It's finally turned up, via the good graces of ***Renegade*** (about $35), and I'm sorry to report that they're a little too late. The concept has just run out of steam. T3 should be familiar to fans of the first two games. It has the hidden powerups and huge level architecture, the out-of-the-way caches, and the in-the-way bosses. The designers also appear to have increased the number of colors again (sometimes almost to the point of muddiness) and added parallax scrolling, and of course the music's still bloody marvelous.

But there's nothing especially fresh about it at this late date —Turrican 3 is Turrican 2 with a George Hamilton tan—and it's a point reinforced only by all the window dressing. It didn't need makeup. It needed a makeover.

I was going to wrap up here with Puggsy—a prehistoric Psygnosis platformer that dates from the same period as Turrican 3—but my copy doesn't work. We will cover it next time . . . in, um, Short Takes.

Fighter Duel Pro 2

A–
1.3 ✔
2.0 ✔
3.0 ✔
Hard-drive installable.
No copy-protection.

Tornado

A–
1.3 ✔
2.0 ✔
3.0 ✔
Hard-drive installable.
No copy-protection.

F117A Stealth Fighter 2.0

B–
1.3 ✔
2.0 ✔
3.0 ✔
Hard-drive installable.
Off-disk copy-protection.

WHERE IS THE great Amiga flight sim? We haven't had more than a half-dozen really good ones: F/A-18 Interceptor, F-29 Retaliator, Knights of the Sky, Gunship 2000, Combat Air Patrol, and (if I was a betting man) the imminent TFX.

With almost nine years' worth of games, that's a relatively short list, and a rather troubled one at that. The best Amiga flight sims do a lot of things well, but rarely do them all at once. Consider three recent releases which, while good to great, point to ongoing problems in the genre: the smooth (but inaccessible), the detailed (but slow), and the playable (but old-fashioned).

Fighter Duel Pro 2 (***Jaeger Software***; $59.95, $30 for upgrade) remains a great dedicated airborne fencing match—Dogfight can't touch it—and devotees who sweated out the two earlier incarnations should fall all over themselves to land this one. You're still going up over Spartan terrain—and into a newly gorgeous, dusky sky—to knock heads with either another human player or computer pilots. And it still flies with a light-limbed self-assurance that almost removes the Amiga from the picture, and that will encourage you to look under your chair with an expectation of seeing clouds.

The new features aren't obvious—unless you boot FDP2 on an AGA machine, where it runs in ultra-smooth, flicker-free hi-res—but they're all over the place. A whole squadron of new plane types has been included—including the first jet fighter, Germany's ME-262—for a total of 25. You can go up against four smarter computer pilots flying more colorfully rendered craft. A "chat" mode lets you zap macroed insults and exclamations to a modem opponent. You can fly with a wingman, or not fly at all and just man an anti-aircraft gun. No obvious problems here, though I wish they'd left in Flight Recorder, a motion path generator. What FDP2 does, it does brilliantly.

However, what it does brilliantly is nevertheless not for everybody. Anyone without prior experience in the Fighter Duel line—or who doesn't have the eyes of a hawk—is likely to find Fighter Duel Pro 2 hard to get into.

For instance, taking off can still be an arduous task for a newbie—happily, you can start a duel airborne—and the manual remains a rather stoic and technical affair. The opposing planes appear as white pinpricks. If you happen to look the wrong way, or allow them to drift up into the sun's glare, you could miss them entirely. I often lost track of my would-be opponents, never to find them again (before they found me), and wound up either wheeling in useless circles in search of them or getting shot down without knowing precisely what I'd done wrong.

Of course, the purists will find this authentic—pilots will love it—and, indeed, it is. Since the planes included here date from the World War II era, there's no on-board radar or heads-up display to track enemies.

But it wouldn't hurt to throw in some play aids for the novice. (I mean, if I wanted to learn to really fly, I'd learn to really fly.) I'm not saying give up the realism—that's a major draw—but if they're willing to allow the wingman's craft to blink for easy identification (which doesn't help all that much), how about a novice-level option to throw a box around the nearest enemy? How about an in-flight trainer or tutorial that would usher users gently into the program, and when they crash (and you will crash), show them what they're doing wrong? It may not be authentic, but land-lubbers might then be better able to enjoy it.

I'm half inclined to beg for more ground detail, too—I want to fly over a city at FDP2's incredible frame rate—but that's never been the point of the Fighter Duels. (Your eyes should always be aimed skyward.) If it's detail you crave, check out Tornado (***Digital Integration***, about $40) instead. It is laden with skyscrapers (and smaller buildings of all description), trains, trucks, nuclear power plants, power lines, a whole raft of aircraft ranging from Chinook helicopters to the big AWACS jets and any number of ground units.

And that detail is just a taster. Built around Britain's versatile Panavia Tornado, this is probably the most full-blooded, feature-rich flight sim to reach the Amiga, and as close as we've come to a Falcon 3.0-level product in size and scope. Though modem play's been dropped in this conversion (null-modem play remains) and the graphics are dithered, there's no sense here of trims or cutbacks, and a strong one that anything you might like to do, you can. Without getting down into the nitty-gritty, you'll especially enjoy the ability to plan missions in detail; the "explore" mode, which permits you to tour any portion of the game area in 3-D; and a superb 332-page manual (yes! an index! thank you!) that's at once literate, simple, and exhaustive.

Continued on p. 70.

Looking for More Power From Your A500 or A2000?

The CSA Derringer Accelerator is the Answer

Give your Amiga 500 or 2000 the power of an A3000 for under $500

- Holds up to 32 megabyte of 32 Bit Ram.
- 68030-25 mhz cpu *with* MMU (not EC)
- 68881 clocked at 25 mhz
- 1 meg of 32 bit RAM (remaps Kickstart)

Only $399.00

With:
- *4 meg of 32 bit RAM – $499.00*
- *8 meg of 32 bit RAM – $699.00*
- *16 meg of 32 bit RAM– $1099.00*
- *68882-25 FPU add $75.00*
- *68882-50 FPU add $119.00*

* Call for more information

Order Now and Receive a FREE 68881 Coprocessor

New Derringer Platinum 50mhz Only ~~$689.00~~ NOW $589.00

Includes:
- *50mhz CPU (with MMU)*
- *4 meg of 32 bit 60ns RAM*
- *Optional 50mhz FPU $119.00*

Same features as the CSA Derringer but faster!

Call our Accelerator Hotline Today! – 1-800-CSA-XLR8

MAGNUM 44
25mhz with 4mb
$999.00

50mhz for the price others charge for 40mhz!

GVP

GVP– A1230 TURBO +

50mhz Accelerator *with* MMU
$649.00 with 4mb 32 BIT RAM.......... *FREE*
For 50mhz FPU.................... FREE

LASER PRINTER MEMORY
HP II, IID, IIP, IIID, IIIP and all other Plus Series

Board with 2 MB	$99.00
Board with 4 MB	$175.00
HP 4 (4 Meg)	$189.00
HP 4 (8 Meg)	$325.00

Similar savings on Panasonic, Star, OKI, TI, Nec, Epson and others. Call for Pricing .

Panasonic/Citizen 32K Buffer $14.95

COMMODORE CHIPS

2.04 ROM	only $33.95
Super Denise	$33.95
1.3 ROM	$21.50
CIA 8520 $10.95 or two for	$18.00
A1000 1.5 MG Upgrade-Memory and Clock/DKB	***$178.00***
MC68000/68010	$15.00
Rom Switcher	$39.95
CSA Rocket Launcher – 2630 Doubler	$399.00
8 up Board with 2 mb	$129.00
1 mb Agnus	$38.00
Paula/Denise	CALL

A 1200 ACCELERATORS

Microbotics– MBX 68030 1230 XA
50mhz Accelerator *with* MMU
$349.00 with 4mb .... add $169.00 / with 68882RC50........... add $119.00
$299.00 with 33mhz CPU and *with* MMU, *FREE* 33mhz FPU

CSA– 12 Gauge A1200 68030
50mhz Accelerator *with* MMU
with SCSI & optional Networking Controller
$499.00 with 4mb-60-70NS ...... add $169.00 / with 68882RC50.......... add $119.00
Call for other configurations

DRAM BLOWOUT
We'll Beat any Advertised Price! Nobody's Cheaper

SIMMS

IVS 1 MEG Simms	CALL
1x8–80	$45.00
1x8–70	$46.00
4x8–80	$139.00
4x8–70	$159.00
4x8–60	$179.00
8mb/16mb/32mb Simms	CALL
A4000 80 NS 4MB Simms	$149.00
A4000 70NS 4MBSimms	$159.00
A4000 60 NS 4MB Simms	$169.00

GVP SIM32

4 MB	CALL
1 MB	$69.95
Nibble Mode Simms	CALL

Mega Midget Racer, 512K Upgrade	$99.00
DKB 2632 with 4mb	$349.00
DKB Megachip 2000	$189.00
DKB 3128A-3000/A 4000 Memory Board	CALL

ZIPS

A3000 Static Column Zips

1x4-80 SCZ	**$24.95**
1x4–70 SCZ	CALL
256x4 - 80 SCZ	$6.00

Includes Instructions

MEMORY FOR ALL COMPUTERS – CALL!
Due to trade tariffs all prices are subject to change without notice.

PAGE ZIPS

1x4-60	CALL
1x4–70	CALL
256x4–80	$5.00
256x4–70	$5.95

DIPS

1x1 – 100	$4.99
1x1 – 80	$5.99
1x1 – 70	$6.50
256x4–80	CALL
256x4–70	CALL
1x4–80	CALL
256x1–120	$1.00
256X1-100/80/70/60	CALL

MICROBOTICS 1200Z
With Clock and 68881RC20 FPU

1 MB	$159.00
2 MB	$199.00
4 MB	$299.00
8 MB	$429.00
with 68882-50	add $119.00

Call for other configurations!

MATH CHIPS AND CPUs

68030-RC-50 with MMU	$139.95
6882-RC-50	$119.95(Call for other speeds)
387-25 SX (Bridge Board)	$69.95
Crystal Oscillators (Call for Speed)	$10.00ea.
68882 PLCC 40 mhz	$135.00
287 Mathco for Bridgeboard	CALL
68881 - All speeds	CALL
68882 - All speeds	CALL

Call for other speeds

Memory World
3070 Bristol Pike • Plaza I, Suite 213
Bensalem, PA 19020 • Attn: Amiga Dept.

PHONE ORDERS: 215-244-7930
FAX ORDERS: 215-244-7932
Prices Subject to Change without notice

VISA/MC/CHECK • Add $5.00 for Shipping & Handling • Add $18.00 for Overnight delivery • Add $10.00 for two-day delivery
• Add $5.00 for C.O.D. • PA Residents add 6% • (APO, AK, HI, Foreign shipping – call for rates) • *10% Restocking fee* for return of non-defective items • No refund for Shipping Charges

Circle 93 on Reader Service card.

DevWare Video - Now 100% Toaster!



VIDEO TOASTER 4000

CALL FOR PRICING ON VIDEO TOASTERS & 3.1 SOFTWARE UPGRADES

AXIOM SOFTWARE

WaveMaker

Effortlessly create flying logos in seconds instead of hours! Simply tell WaveMaker the logo you want to animate, how you want it to fly around the screen and what elements you want in the background. Saved time=money made! T5159 **$149.95**

PIXEL 3D PRO



Blowout! $79.95

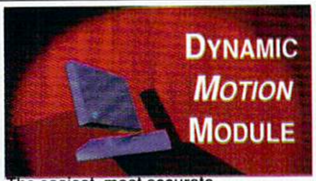
Convert bitmap pictures of logos and shapes to 3D objects with unrivaled quality. Fly those logos quickly and easily! T5158

ANIM WORKSHOP 2.0

Create, play, edit and add sound to your Anims...automatically! Use Art Dept on any/all frames of your animation! Now supports Anim5, 7 and 8! T5104 **$99.95**

WaveLink

Double the speed of LightWave! Allows two Toaster systems to render at the same time. Also allows file sharing. T5155 **$89.95**



DYNAMIC MOTION MODULE

The easiest, most accurate way to motion-animate with LightWave 3D! **$139.95** Dynamic Motion Module lets both animation novices and experienced animators rely upon the laws of physics and computing power of the Amiga to automatically define and create real-world motion and object interaction in LightWave animations. T5054



Sparks by MacroSystemUS

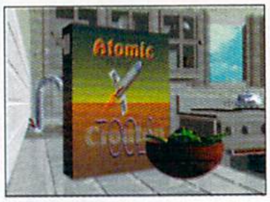
Particle animation system for LightWave 3D. Particles bounce with real world behavior & gravity! Multiple point gravity wells allow bending and directing the stream, flock or swarm of particles. Control Origin, direction, gravity, quantity, spacing, elasticity and mass. Complete with wind, gusting, flaking and swirling controls–adjustable per axis! Do in seconds what would take days to set up! T5164 **$99.95**

Raptor

This bad boy has the equivalent rendering power of **15** Video Toasters and is a steal at this price! Fully loaded, price includes 128MB RAM and 8-user ScreamerNet software license (Ethernet adaptor and ENLAN-DFS software required to connect your Video Toaster–not included). Leasing option available. (Formally known as The Screamer) T8500

Screaming at... **$15,945**

CROUTON TOOLS 4000



Okay, so you own software like ADPro, SFC, Studio 16, Pixel 3D, ImageFX, Bars & Pipes Pro, AmiLink, Personal Anim Rec., ImageMaster RT and others...and they all say that they're ARexx compatible...great!! Now what? You can spend all your time programming in ARexx to make these powerful applications work with each other, or you can continue producing videos like you set out to do.

Crouton Tools 4000--The Easy to Use Video Operating System (VOS)--was created by a video enthusiast with over 20 years of experience. 1100 Pre-defined video tools, 150 NEW synergistic functions, ToasterSmart™ Directory Utility and **Visual Logging System**...power at your fingertips! Crouton Tools 4000 greatly accelerates your pre- and post-production video while seamlessly integrating your applications directly within your Toaster environment. T5012 **$129.95**

A must-have package for serious video professionals!

BUY YOUR TOASTER SYSTEM WITH CONFIDENCE FROM DEVWARE AND ATOMIC TOASTER!

Our Atomic Toaster Catalog has over 20 years of video production experience. They have been servicing Video Toaster Users since Day One with unrivaled technical support, a catalog so informative we receive referrals from NewTek, and innovative seminar training. With **Atomic Toaster and DevWare Video**, you will be able to count on our creative support and in-depth knowledge of all products for the Video Toaster--combined with DevWare's product purchasing power and abilities to fulfill your orders quickly! The net result is our ultimate combination of both technical know-how and the best pricing available for *all* your Video Toaster needs.

Why should you buy Video Toaster systems and Video Toaster-related products from Atomic Toaster?

Because we *love* Toasters! The Video Toaster is the most successful video production tool ever. We don't sell Video Toasters as commodities and leave you without answers to your questions...we use them every day! We are Toaster fanatics who are constantly pushing the systems to their limits. To us, a good Toaster computer system is made for audio, video and print applications. Atomic Toaster wants *you* to be the most successful producer ever. Our combination of production skills and our constant testing and use of new Toaster-related products -- will give you the Creative Edge.

* **The Starter System**
* **The Animator**
* **The Artist**
* **The Craftsman**
* **The Professional Animator**
* **The Professional Editor**

"THE FLYER"-**NewTek's *Non-Linear Editing System* is coming!!!**

Order your Flyer from DevWare and Atomic before June 30, 1994 and SAVE $500!!

We integrate and support all Toaster-related software and hardware. Do you want to know about the Video Toaster revolution and what it can mean for you? Call Atomic Toaster/Devware now!

Call for our *free*

"ULTIMATE VIDEO TOASTER PRODUCT CATALOG VERSION 2"

Now available. The most extensive listing of software, hardware, CD-ROM, accessories, videotapes and books for your Toaster-related needs.

COMPOSITE STUDIO

Your ultimate program for controlling ToasterPaint or OpalPaint! You can design your own templates, set shadow depths, do beveling, embossing, and much more. Comes with 40 templates! You can quickly and easily combine, resize, and arrange Framestores or RGBs. Composite Studio is perfect for the video, multimedia, or broadcast professional. **Includes Quickbrush 4000**–a $69.95 retail value! T5294 **$149.95**

ALPHAPAINT



New! High-end Paint Box Performance for your Toaster! Create stunning network caliber graphics in a snap with this full-featured, *36-bit* professional paint solution! *Get true, REAL-TIME painting in 24 bits–directly on your Toaster's display. *Full-screen, free-form WYSIWYG painting–with no waiting. * **12-bit Alpha Channel** for image texturing, blending and compositing. * Paint into your Toaster's hardware Video Mixing Channel for unique Live Video Transparency and Soft-Edge Feathering Effects! Available mid-June. T5293 **$Call**

MONTAGE



From Innovision Technology. If you do CG work with your Toaster–you need MONTAGE. 24-Bit Graphics Breakthrough for the Video Toaster from Innovision Technology. Your definitive solution for video titling, image composition, and effects presentation for the Video Toaster!

Features: Incredible Real-Time Font Scaling andinteractive "click and drag" font scaling allows for unprecedented text display flexibility! Scaled text retains ultra-high level anti-aliasing. The solution you need to maximize your creative output with your Toaster! T3053 **$319.95**

MONTAGE 24	T5068	**$219.95**
MONTAGE FONTS I	T5015	**$119.95**
MONTAGE POSTSCRIPT MODULE Real-time font scaling of Postscript fonts with independent proportional, horizontal and vertical re-sizing. Effective resolution of 1 nanosecond regardless of size.	T5237	**$209.95**
MONTAGE + POSTSCRIPT MOD	T5244	**$479.95**
BRDCAST TITLER 2 HI-RES	T3051	**$169.95**
BRDCAST TITLER 2 FONT 2	T1162	**$94.95**

900-896-8555

$2/Min billed to your telephone

Need Help?

Not getting the Toaster support you need? Call our video professionals for Toaster system design and software support.

Service provided by DevWare, 12520 Kirkham Court, Suite 1, Poway, CA 92064

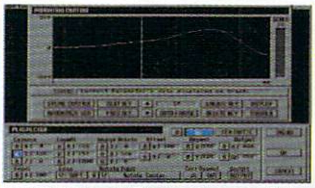
Problems with 900#? Contact (619) 679-2826

Video Toaster Resource:

For Video System Design Information: (619) 679-2823

Call for Software Orders: (800) 879-0759

All of our software is 100% satisfaction guaranteed!



ADPTools Professional 2.5

Brand new version! A complete animation processing system! Do more processing in one pass! Process alpha files for compositing, while moving video in another channel. Version 2.5 is easier to use and requires much less hard drive storage! A must-have creative tool for all animators and video producers! T5306 **$124.95**

Art Department Pro Version 2.5 *Newest Release!*

The premier image-based processing package, preferred by Toaster and graphic users everywhere just got better! A *completely* new interface and updated loaders/savers!! T1160 **$149.95**



Blue Ribbon Sound Works

"MIDI is the best way to put background music into your desktop video productions!"

Bars & Pipes Professional Ver 2.5 **NEW Version!** The state-of-the-art MIDI sequencer for your Toaster and Amiga--is now even better! New features and improvements have been made to the Track Window Menu, Edit Window, Song Construction Window, Metronome, Printing, Tools and Accessories sections. T1183 **$229.95**

One Stop Music Shop 16-bit, 32-voice CD-quality, fully digital, stereo audio and music system! T5108 **$564.95**

PatchMeister Universal patch librarian with over 20 drivers. T5109 **$59.95**

SuperJam! Create and synchronize musical soundtracks. Requires little musical finesse to accomplish exciting results! T1185 **$77.95**

SyncPro Synch MIDI with your multimedia, video and audio hardware! T1184 **$179.95**

Triple Play Plus 48 MIDI channels available in one interface! T5028 **$164.95**

Byrd's Eye Software

Toaster/FX Paint directly on the Toaster's Program Output with Toaster/FX and GVP's ImageFX!



- Paint, scan, image processing and morphing–all viewed directly on any Video Toaster output buffer!
- 24-bit painting tools with 8-bit alpha channel.
- Full screen painting with variable zoom levels.
- Special effects filters–Ripple, Distort, Oil Paint, Sharpen and more... T5290 **$124.95**

Swipes! Stunning new color transitions and special effects for Video Toaster 4000 users! Now you can get:



- Dozens of NEW Color Effects!
- Special Effects overlays.
- Color transparency effects.
- Full-color animated transitions.
- Alpha channel dissolves.

T5291 **$109.95**



Toaster Toolkit 4000

New Low Price! **$79.95**

The indispensible collection of utilities for Video Toaster users. Toaster Toolkit 4000 breaks all barriers for harnessing creative control over your Toaster Environment--allowing for presentation professionalism limited only by your imagination. You raved about version 1, break free of the mundane with these new and improved powertools of Toaster Toolkit 4000! **•Toaster Sequence Editor •Toaster Project Editor •FrameStore Compressor •AnimtoFX •FXtoAnim •Color Font Converter.** T5095

Dark Horse Productions



"LightWave 4000 For the Rest of Us"

Volume 1: Flying Logos New! Construct a logo from your clients letterhead, make hundreds of special 3D fonts straight from any printed material, add surfaces and images to make them shine! Fly that LOGO and animate it to tape without a single frame controller! Complex object motions made simple with the null object. Contains a "Rogues Gallery" of 36 example surfaces. V4056 **$39.95**

Volume 2: Bones & Organic Motion New! Swimming sharks, swaying trees. Use Bones to realistically animate almost anything. V4110 **$39.95**

Volume 3: Displacement Mapping New! Construct landscapes and trees. Animate waving flags and moving water. Displacement maps make it possible. Use displacement maps to construct and animate natural formations, and create spectacular special effects. 120 mins. V4124 **$39.95**

Get all 3 videos and SAVE! V4125 **$104.95**



New Version 1.5!

More Power! More Features! Was $299!

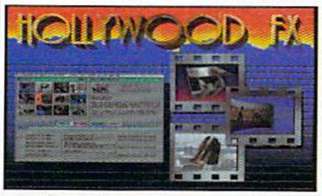
If you do image processing, you must have the new **ImageMaster R/t.** Retargetable operations gives you true colors on all popular 24-bit cards and even adjusts the display to compensate for your monitors shortcomings, so what you see is *truly* what you get. T5100 **$69.95!**



A Powerful Morphing System, at an Affordable Price!

Cocoon is a full-featured, professional morphing system without the Rolls Royce price. Perform warps and morphs using vectors--the easiest way to define and execute morphs. T5056 **$69.95**

Hollywood FX



New From Synergy Int'l

Hollywood FX creates amazing 3D effects for video and interactive productions, using Lightwave for the highest quality rendering.

Includes dozens of effects including multiple full motion video windows, 3D morphing transitions, particle effects and more. T5298 **$389.95**

Alfa Data

MultiFaceCard III T5239 **$89.95**



Oktagon (SCSI-II A3000/4000) T5240 **$139.95**

AlfaDrive 3.5" External Floppy Drive for all Amigas T5253 **$74.95**

AlfaScan Plus 400 DPI Hand Scanner with Touch Up Software T1024 **$139.95**

Mega Mouse 400 DPI replacement mouse for all Amigas T5243 **$27.95**

AlfaOptic Optical Mouse 300 DPI fully optical mouse T5288 **$44.95**

Optical Pen Mouse For graphics professionals. T1017 **$64.95**

AlfaColor Hand Scanner T5214 **$299.95** Scan & Save 256,000 colors on AGA Amigas, 4096 on non-AGA Amigas.

AlfaScan 800 DPI Hand Scan T5242 **$189.95**

Crystal Trackball T1019 **$44.95**

ClariSSA

The Animation Generator for your Toaster you've been waiting for from Spectronics International! This product is ideal for creating 2D morphs and animation segments. Features animation manipulation tools such as mark, cut, copy and paste, an integrated virtual memory function, built-in screen grabber, and color effect functions such as internal looping of sections, simultaneous forward and playback, field cut, Dynamic Anim Record, and Picture-in-Picture. T5300 **$149.95**

Par Card

Personal Anim. Recorder Digitally record your animations direct to the dedicated hard drive. Create animations without the expense and aggravation of tape decks. It will even genlock to your system! No time base error, jitter, skipped frames, or botched edit points you encounter with traditional recorders! By Digital Processing Systems. Call for the best pricing on PAR cards with 525MB, 1Gig or 1.5Gig Micropolis drives!

ImageFX GVP's

powerhouse image processor. If you use, or want to use, your Amiga or Video Toaster for photography, graphics, video, animation and more–then ImageFX is the fastest, easiest, most expandable, most adaptable and most powerful set of color image processing tools available. Digitally retouch images with the most complete set of filters, color gradients, image distortions, masks and text handling tools. Automatically convert image files from over 25 file formats! SALE! T3060 **$214.95**



Pegger

New version 1.3! Now has superior FrameStore support! Automatically compresses 24 bit IFF, DCTV, FrameStore and HAM8 images with JPEG copression. Saves lots of hard drive space and is invisible to your video applications! Works automatically in the background! T5123 **$66.95**

Mastering Toaster Technology



The step-by-step guide from Video Toaster experts Brent Malnack and Phil Kurz that no Video Toaster customer can do without! Learn Toaster set-up and operation, rotoscoping techniques, how to make perfect 3D logos, creating mattes and flying mattes, how to master the alpha channel, and much, much more. Plus 2 disk set filled with 3D objects, a beveled & color font set, anim wipes and clip art. Includes Toaster 4000 suplement. B106 **$39.95**

MacroSystem



Warp Engine **The most cost effective accelerator is NOW AVAILABLE!** The only accelerator that provides the high speed of a 68040, up to 128 MB of local '040 burst memory and the fastest SCSI-II controller–on a single card that installs in the CPU slot! Call for best pricing on RAM!

40Mhz '040 w/0K RAM T5285 **$1499.95**

33Mhz '040 w/0K RAM T5286 **$1299.95**

Multiframe (for ADPro) The ULTIMATE special effects device for your Toaster! Easily create complete motion-picture quality special effects for any Toaster application. No jaggies or artifacts. The professional's tool for creating digital video sequences, special effects and animations. Apply ADPro's single-image processing power to your anims. T5098 **$69.95**

MultiLayer for ADPro 2.5 compositing/layering tool for video pro's and artists using ADPro as a compositing engine. Several types of compositing/digital keying are supported including Zero-Black keys, Luminance keys, Chroma keys and Alpha keys to 32bit precision. T5227 **$124.95**

MultiLayer-ImageF/x T5228 **$124.95**

New from Noahji's



Retina ZIII 24-Bit Display Board w/4MB Get photorealistic display capabilities with this 24-bit graphics card and plenty of "chip ram" for your most intense graphic needs. Go way beyond AGA and still maintain full compatability. For A3000 or A4000. T5129 **$699.95**

Retina ZIII Board 1MB T5222 **$569.95**

VLab Y/C Digitize 30 frames per second from videotape or laserdisc in full color! Two composite inputs and 1 S-video (y/c) input. NTSC/PAL compatible. T5225 **$429.95**

Studio Printer Print 16.7 million colors or 256 levels of gray on Hewlett Packard Laserjets and Deskjets as well as Canon Color Printers! Supports the latest 600 dpi printers too. True to screen colors with color adjustment with 32bit accuracy. Also includes special drivers for PageStream 2.xx. T3062 **$69.95**

Toccata 16 Now available! Full 16bit audio digitizer with 3 Stereo inputs, 1 Mic input and 1 stereo output. Toccata can digitize at up to 48Khz in 16bit, direct to hard disk! Includes onboard mixer and optional ADPCM compression! T5222 **$569.95**

Circle 42 on Reader Service card.

DevWare Video

ADPro Conversion Pack	T5161	$64.95
Alladin 4D	T2031	$279.95
AmiBack Plus Tools	T5165	$69.95
Artworks Clip Art Library	T5194	$34.95
ASIM CDFS V2	T5092	$59.95
AutoPaint for ToasterPaint	T5142	$74.95
Backdrop Construction Set	T5265	$49.95
Batch Factory	T5256	$44.95
Broadcast Titler II Sup Hires	T3051	$169.95
Brilliance	T5019	$139.95
Broadcast Titler II Font Pack 2	T1162	$94.95
CanDo - Newest version	T1193	$129.95
The Cathedral NEW LOW $$!	T5297	$49.95
DeluxePaint IV 4.1	T1031	$99.95
DeluxePaint IV AGA	T3058	$109.95
Digital Sound Track	T5202	$59.95
Directory Opus 4	T1032	$64.95
Distant Suns	T5049	$61.95
ENLAN DFS 2	T5096	$259.95
Helm	T5050	$89.95
Interchange Plus 3	T5052	$129.95
The Jurassic Collection	T5264	$139.95
KARA ANIMFonts Vol 1-5	Call	ea $34.95
KARA ANIMFonts 1-5 Bundle	T5257	$164.95
KARA Plaquegrounds	T5156	$64.95
KARA Starfields	T5157	$44.95
KARA Toaster Fonts I-IV	Call	ea $59.95
Mailing List Manager	T5201	$34.95
Morph Plus	T1067	$129.95
Odds & Ends	T5295	$44.95
Playmation	T1068	$299.95
Power Macros for the Toaster	T5299	$119.95
Pro Control for ADPro	T5247	$69.95
Pro Fills Vol. I	T1175	$32.95
Pro Fills Vol. II	T1176	$32.95
Pro Fills Vol III	T5166	$32.95
Pro Fills I, II, III Bundle	T5179	$59.95
Pro Textures Combo Coll.	T5192	$64.95
Pro Wipes Vol. I	T5143	$74.95
Quarterback Tools Deluxe	T1038	$74.95
Quickbrush 4000	T5266	$54.95
Real 3D Profesional V. 2	T5044	$389.95
Roll'em Teleprompter	T5013	$49.95
SCALA Multimedia 300	T5248	$399.95
Scenery Animator	T3074	$59.95
SMPTE Output	T5067	$149.95
SurfacePro	T5182	$74.95
TapeWorm FS	T5167	$69.95
Texture City CD-ROM	T5016	$79.95
Toaster Handler for AD516	T5305	$189.95
The Wedding Collection	T5267	$64.95
The Sports Collection	T5268	$64.95
The Music Collection	T5282	$64.95
Wedding, Sports, Music Coll.	T5283	$179.95
Transpolrter	T5193	$109.95
Trexx Professional	T1180	$134.95
Video Director	T1116	$129.95
Vista Pro 3.0	T1097	$64.95
WaveWriter	T5061	$73.95

Other Hardware

GVP '040 @ 40Mhz w/4MB	T7057	$1589.95
EGS Spectrum 28/24 w/2MB	T5218	$499.95
Personal TBC IV	T5204	$829.95
Personal Editor (Nucleus)	T5207	$569.95
SunRize AD516 w/Studio 16	T5066	$1174.95
WaveTools	T5254	$369.95
WaveTools RTX	T5258	$299.95

Still haven't found what your looking for? Give us a call...chances are we have it!

How To Order...

From DevWare Video/ToolChest: Write your name, shipping address, daytime telephone and, if paying by credit card, the card's billing address. Then list the product codes of the items you would like to order (i.e. V2040, T2038, T2035,e tc.) and the price of each item. Enclose a check/money order or credit card number & expiration date & mail to:

DevWare Video • 12520 Kirkham Ct, Suite 1-AW52 • Poway, CA 92064

Shipping/Handling: U.S.A.: add $5, plus $1 for each add'l unit shipped. Canada: add $7, plus $1 for each add'l unit--call for book shipping. Foreign: Call for shipping info. All payments in U.S. funds only. CA residents add 7.75% tax. 15% restocking fee on all returned commercial products. Prices subject to change without notice. Not responsible for typo's. **A minimum of $20.00 required on all credit card orders.**

DevWare ToolChest

PC Task Version 2

The inexpensive and powerful IBM VGA Emulator solution for any Amiga! This amazing program lets you actually RUN MS-DOS software on your Amiga! PC-Task runs as a task on it's own screen--leaving your other Amiga applications free to continue to multitask. PC-Task is a software-based emulator and, as such, is not as quick as a hardware bridgeboard, but is also hundreds of dollars less! Perfect for your occassional MS-DOS needs. PC-Task even allows you to use your Amiga's serial and parallel ports for the PC emulation! PC-Task even takes advantage of an accelerator...the faster your Amiga, the faster the emulator runs! T5072

$39.95

HomeBuilders' CAD Deluxe -- Sale Priced!

A full-featured CAD program. Includes: Contractor's Upgrade, HomeBuilders Library 1 and DeckBuilders CAD Design and Estimating System for Decks. From a room addition to a cluster of condos; HomeBuilders CAD makes it easy to design, change and estimate your next project.

$69.95

Features include: •20 acre drawing area. •Accuracy to 1/60th inch. •Supports buildings over 200 stories high. •Over 300,000 layers. •Over 60 predefined doors and windows. Contractor's Upgrade allows you to have up to 1000 items (instead of 450) per layout. Library 1 is a library of furniture and custom kitchen cabinets. AmigaDOS 2 compatible. Requires 2.5MB of RAM. Original list of over $400! T4032

HomeBuilders' CAD 2

Includes all of the above except Contractor's Upgrade and Library 1. AmigaDOS 2 compatible. With 2 disk drives, requires 1MB, with hard drive, requires 1.5MB. Original list price: $249.00 T2040 **$49.95**

Information Manager Professional

THE personal information manager for professionals who need all their Time Management concerns at their fingertips. Organize your business contacts and more with this information manager! Keeps track of all business contacts with all necessary information and history. Also branches out to Project and/or Agenda databases for individual contacts. Calendar module schedules from day to day, month to month and year to year. It tracks to do's, appointments, birthdays, anniversaries and U.S. & Canadian holidays. Other modules include Reservations (tracks accommodations, transportation and dining), Wallet, Inventory, Computer Equipment Database and World Area Code Database. All areas have online help, search, print, iconize, calculator. T5196 **$69.95**

Home Manager Professional

What Information Manager does for your office, Home Manager Pro will do for the home. Address Book, Appointments, Area Codes, Contacts Database, Inventory, NotePad, To-Dos, Alarm Clock, online help and more! T4035 **$29.95**

An Introduction to the Amiga: Operating System 2.1 and 3.0

The only videotape available on using new AmigaDOS 3!

New Release! What every new Amiga owner needs! Covers the basics, system design, basic operations, preferences, tools and utilities, files & directories, AmigaDOS & the Shell, tips and tricks and how to customize your system. Includes bonus companion disk with useful utilities. 90 minutes. V2196 **$39.95**

Unicorn Educational Software

We made a special purchase of these programs at a remarkable price and we're passing the savings on! *All titles had original prices of $49.95 to $59.95!*

All About America	Ages 6-11	T2041	$16.95
Land of the Unicorn		T2042	$16.95
Adventures of Sinbad	Ages 9-14	T2043	$16.95
Aesops Fables	Ages 6-9	T2044	$16.95
Decimal Dungeon	Ages 9+	T2045	$16.95
Fraction Action	Ages 8+	T2046	$16.95
Kinderama	Preschool to 1st	T2047	$16.95
Magical Myths	Ages 9-14	T2056	$16.95
Math Wizard	Grades 1-6	T2048	$16.95
Read-A-Rama	K to 3	T2049	$16.95
Read & Rhyme	Ages 5-8	T2050	$16.95
Tales from the Arabian Nights	Ages 9-14	T2051	$16.95
The Logic Master	10+	T2052	$16.95
Wonders of the Animal Kingdom	Ages 6-12	T2053	$16.95
Word Master Vocabulary Builder	Ages 8-14	T2054	$16.95
Get any 3 Unicorn Titles and SAVE!		T2055	$44.95
Get Any 5 Unicorn Titles and SAVE!		T2059	$69.95
Get all 12 Unicorn Titles and Really Save!!		T4051	$189.95

True BASIC — Sale Price $19.95!

A complete, high-level programming language

True BASIC 2.0, Student Edition T2033

Get special pricing on these other TrueBASIC math programs!

Algebra I	T1074	$14.95	Algebra II	T2034	$14.95
Calculus	T1082	$14.95	Pre-Calculus	T2035	$14.95
Trigonometry	T1093	$14.95	Discrete Mathematics	T2064	$14.95
Probability Theory	T2060	$14.95	TrueSTAT	T2061	$14.95
Get any 2 math pgms	T2036	$26.95	Get all 8 math programs	T2062	$94.95

Get all 8 math programs *Plus* TrueBASIC 2.0 T2063 **$109.95!**

The Music Box

OctaMED Professional V. 5

Over 100,000 sold!



"OctaMED was already by far the best MIDI and music sample sequencer about - now it's even better." CU Amiga. OctaMED Pro is the premier music sequencing package for the Amiga. Version 5 has been completely rewritten for Kickstart 2+ (required) and features standard windows and pull-down menus for easy, familiar operation. Discover what Europeans know, love and depend upon. OctaMED doubles your Amiga's 4 channel audio capabilities for an ear-popping eight channels of stereo audio! Complete and thorough online, context-sensitive manual...no more searching through manuals!!! •Standard Music Notation Display • 64 MIDI tracks • Improved control over sampler and sampler effects: Unused space can be removed from the start or end of a smample, and looping controls are easier to use than ever. Pitch Changer • Generic Slide Function •Built-in sampling software •AutoSave •Full Printing T5051 **$69.95**

OctaMED Professional Manual The must-have tutorial and reference guide T5273 $29.95

OctaMED Pro 5 + The OctaMED Manual T5279 $79.95

OctaMED Professional 4 If you only have Kickstart 1.3, this is the version for you. Has all of the basic features which made OctaMED a world-wide best-seller! T4001 **$39.95**

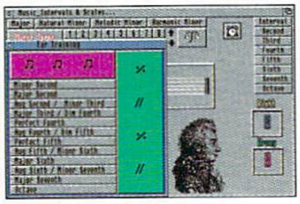
Amiga Music File Converter Pro Converts between SMUS, MED, OctaMED, Music-X and Sound-Tracker Formats. Also Music-X to MIDI. T5101 **$29.95**

AMFCP + OctaMED 5 T5102 **$79.95**

MusicLab IFS T5106 **$39.95**
Both novel and fun--simple or complex--this program allows you to take advantage of the organizational properties of fractals to produce musical sequences with substantial musical unity and cohesiveness. Sequences can be saved as MIDI or IFF SMUS. Original List Price $89.

Video Music Box T5107 **$44.95**
Compose musical backgrounds for video and multi-media--quickly and easily. An almost infinite variety of musical sequences can be created having rock, jazz, blues or latin "feels" - with the large supplied library of chord progressions and pattern templates. Saves in IFF and SMUS file formats.

Piano Tutor T5093 **$29.95**
Rapidly master the basics of playing the piano! Learn to play blues, rhythm, rock, jazz, improvisational–all of which are the basis for modern music. Piano Tutor is a structured, rhythmic system of learning how to play true keyboard. Requires sequencer capable of reading standard MIDI files.



Mozart's Music Master T5094 **$39.95**
Makes music reading and learning theory easy! Mozart's Music Master has scored rave reviews from music major graduate students. With this new program you can: •Learn interval shape recognition. This also can be a timed or scored activity. •Learn interval ear training •Learn to identify scales using a graphic representation. •Includes a bonus feature! Music Tutor allows you to access music terms and identify symbols using its music terms database. Add your own terms to the database with the built-in text processor!

Order Toll-Free 1-800-879-0759

Fax: (619) 679-2887
Technical Support: (619) 679-2825

Or mail your order to: DevWare, Inc. - 12520 Kirkham Court, Suite 1-AW52, Poway, CA 92064

Dealer Inquiries Welcome. For PAL videos call Wendy Burgess Video (011)-44-874-61163. Prices and availability of product are subject to change without notice. Prices effective Martch 25, 1994

DevWare

Serving the Amiga community since 1985

Public Domain Library

$3.45* ea. 30+ Disks

$3.95* ea. 20-29 Disks

$4.45 ea. 11-19 Disks

$5.95 ea. 1-10 Disks

****SPECIAL**** Order 15 disks and receive a complimentary copy of Anti-Virus (a $20 value) ***AND*** pick any 3 disks of your choice!

We have been the official Public Domain Library of all the best Amiga magazines. Find out why these magazines choose us! The first two letters on each disk indicate the orientation of the disk; WB# general interest - most programs can be run from the workbench, FD# games and entertainment, VO# are video related programs/utilities and DD# advanced--requires thorough knowledge of AmigaDOS/CLI. *Thanks to our extensive arsenal of anti-virus software, ALL of our software is guaranteed virus free!*

GUARANTEE - We believe so strongly in our product that we offer a full *lifetime*, complete satisfaction guarantee. No questions asked.

Best Seller!

WB141ABCD: Amiga Verse Search The Authorized 1611 King James Bible...online! Complete cross-referencing to all words is included. Runs on all Amigas with 1MB of RAM and 2 drives. Requires WB1.3+.

Newest Disks

WB144: Molecule CPK renders space filling representations of atoms and molecules. Req's WB3.0+ & Hard drive.
WB143: ViewTek THE definitive display utility. Versions included for Amiga, DCTV, EGS, FC24, Picasso, Opalvision, Retina, IV24. Also includes new MakeAnim7 utility.
WB142: JCGraph A beautiful graphic package...pie charts, 3D charts of all types...exports EPS, IFF & Draw2000 formats!
WB145: Big Dummies Guide to the Internet An interactive AmigaGuide to the information highway and how to tap it!
WB140: Mr. Backup A powerful hard-drive backup utility with full tape-drive support. Formally commercial! Req. WB2+
WB139: MIDI Performance Manager Utility to manage a MIDI synthesizer and other MIDI equipment. Requires WB 2+.
WB138: 3.0 Extras #2 - Another disk chocked full of utilities to unleash the power of Workbench 3.0 and AGA!!
WB137: The ARexx Guide - Full AmigaGuide (inc.) document to teach you ARexx!!! Tip-filled with easy x-referencing!
WB135: 3.0 Extras #1 - 13+ utilities for WB 3.0. Several must-haves for getting the most out of your new graphics modes!
FD96: Tetris Duel AGA - The next generation Tetris..2 players can play head to head and sabotage each other! Great graphics for AGA machines! Req's A1200 or A4000.
FD95: Deluxe Galaga - You should be paying $40 bucks for this one! Easily one of the best p/d games ever! All kinds of power-ups and silky smooth motion. Req's 1MB Chip RAM (Fat Agnus) for PAL Mode.
FD94: Scorched Tanks - completely updated and compatible with AGA/3.0! 60 different ways to blow each other away! An outstanding game of angles, trajectories & unique arsenals!
FD93: MegaBall AGA - This is the one you've been waiting for! Updated to knock your socks off! THE best p/d game for the Amiga. Req.'s WB2+ & 1MB RAM. Show off that AGA!
FD92: Blast'em - contains Scorched Tanks--a tank battle with futuristic weapons/defenses & "great" graphics. Galactoid is a Galaxian/Space Invaders game completely Amiga-tized.
FD91: Popeye - A clone of the original C-64 classic--Amiga style with enhanced graphics. Req 1MB chip RAM for PAL.
FD90: Conquest & Dominion - Conquer the known world and maintain dominion over it--a microcosm of economic survival.
FD89: Kastle Kumquat - A thoroughly entertaining and challenging maze/adventure game. Great soundtrack and graphics. Req's 1MB Chip RAM (for PAL mode).
FD88: AmyBoulderdash - a clone of the original classic.. extremely well done complete with level editor, 2 complete sets of levels and a level editor. Requires Workbench 2+.
FD87: OXYD- A commercial quality game--similar to Marble Madness in nany ways, but allows two computers to link & play together...see how many of the 200 landscapes you can complete without having to get the hint book!
FD86: UChess: The strongest playing Chess program available for the Amiga period. Req. 68030+, Workbench2+, 4MB RAM or more. Supports AGA (req. 8MB!)
DD93: Magic User Interface Greatly speeds development. Auto Screen/Window/Font sensitive interfaces and *much* more!
DD92: Developer Contains the official Commodore developers kits for the AmigaGuide and Commodore Install Utilities...a must have for all serious developers.

Fun Disks

FD6: GAMES! - This disk is chock full of games including; Checkers, Clue, Gold - A new slide the pieces puzzle, Jeopard - An enhanced version of Risk, RushHour - Surprisingly addicting, and SpaceWar - Best described as a cross between Combat-Tanks and asteroids.
FD7: Pacman - This disk contains several pacman type games including; PacMan87, MazeMan and Zonix.
FD10: HackLite - A dungeon adventure game. Considered a must-have classic. This is the 2nd release of this game. Great graphic interface. Play time several weeks!
FD11: Las Vegas and Card Games - Las Vegas Craps - The best Las Vegas Craps simulation every written for any computer. Contains extensive HELP features, Also Thirty-One,VideoPoker and more.
FD12AB: Star Trek, The Game - This is by far the best Star Trek game ever written for any computer. It features mouse control, good graphics, digitized sound effects and great gameplay. Counts as 2 disks. Req. 1Mb and two drives (or hd).
FD13: Board Games - contains Monopoly, Dominoes, Paranoids, and others.

DD83: IBM - Not one, but *TWO* IBM emulators that will allow the running of MS-DOS software *with* Amiga programs!!! Comes complete with programs to turn your Amiga floppy drives into 720K IBM compatible drives. Also, check out our PC-Task emulator on our DevWare Video page!

FD17: Educational Games - This disk includes several games for youngsters including geography, math, science, and word games, also includes Wheel of Fortune.
FD20: Tactical Games - MechForce; A game that simulates combat between two or more giant robots. Simple words can't begin to give you the feel of piloting a 30 - 40 foot tall, fire breathing, earth shaking colossus that obeys your every whim.
FD27: Arcade Games - This disk is loaded with some great games. Includes, Raceorama a great racing car game with ten different courses, MiniBlast a helicopter gunship type clone, Shark in the same class as frogger, and SBreakout the original breakout with more.
FD31: Games! - Air Traffic Control - a good ATC simulation, Black Jack Lab - a full featured set of card games, ChessTel - play chess with your friend in distant and remote places with this game and a modem, labyrinth - a well done text adventure game (like an infocom game), and MouseTrap - a 3d maze game.
FD32: Flight Simulator - An instrument simulator for a DC10.
FD33: Arcade Games - Ffreddy a Mario Brothers type of game, Gerbils a target practice game, PipeLine a German interpretation of Pipe Dreams, Tron a light cycles version, and Wetroids a wonderful version of asteroids with a hilarious twist.
FD38: Games - Cribbage Master - A great cribbage game and tutor, Spades - a well done card came, ChineseCheckers - A computer version of this classic, Puzz - a slide piece puzzle game and construction set.

WB105AB: Workbench 2+ Extras #2

This set contains the programs that should have been included with WB2+. These powerful utilities take full advantage of the many new capabilites that are available in Workbench 2+. Includes: Tool Manager - a wonderful utility to add programs to your TOOL menu, Virus Protection - Degrader, Icon - Enhances Workbench's "Show All" to display over 40 distinct icons for different types of files. Bitmap Font Editor, Screen Blankers - ala fractals and spliners and swarming bees! Requester Enhancers and CPUBlit. Two disk set, counts as two.

FD39A&B: Star Trek, The New Generation - This is a completely different version of Star Trek than that found on FD12. This one was created by the German author Tobias. Excellent!!! Counts as two disks. Requires 512k
FD50: Submarine Game - Sealance, one and a half years in the making, this is an outstanding submarine tactical game. Commercial quality, highly recommended.
FD57: Arcade Games - Includes 2 truly commercial quality games. MegaBall, an Arkanoid-ish game, features 5 musical scores and addicting gameplay. Gravity Attack is a psychadelic trip through several different worlds—each different.
FD59: Game Potpourri - Xenon III is an almost exact clone of the commercial game of the same name...a great shootemup. Crossword will take lists of words & automatically generate word-search puzzles for any Epson compatible printer.
FD60: Games - In Nebula, race over a 3d world to destroy enemy installations. Interferon; a *great* Dr. Mario clone. Enigma; is it a game or puzzle?
FD61: Games - Solitaire; great graphics, plays two versions. Klide; an interesting piece of eye candy. Extreme Violence; 2 player kill or be killed game. YATC; A Tetris clone with Artifical Intelligence. Genesis; create realistic 3d fractal worlds.
FD62: PomPom Gunner. An extremely smooth and well done World War II gunner simulation. Req. 1 megabyte of memory.
FD67: Arcade - Includes Llamatron a well-done 'Robotron' clone. Hate is a "terrific" Zaxxon clone with multiple levels/worlds and smooth diagonal scrolling...a 10!
FD69: MindGames - Had enough of shoot-em up games? Relax and let these 21 games exercise your mind instead of your wrist.
FD73: Arcade Series - Intruder Alert! is a MULTI-level "Berserk" clone. Features smooth gameplay, great graphics & digitized sound f/x.
FD74: Arcade Series - RingWar is an "Outer Limits" clone with vectorized graphics. MotherLode is a "Lode Runner" clone with 50 levels! In BlitzTanks, they're coming at you from all directions!! Call in air strikes and use your heavy artillery to survive!
FD75: Arcade Series - Descender is a clone of the classic arcade game "Tempest"; complete with vectorized graphics. Tanx is the classic battle of trajectories and inertia between two tanks—incredibly well done! Search is a maze game unlike any other—included is a level editor too. (Tanx requires 1 meg chip memory=Fat Agnus)
FD77: Arcade Series - Galaga'92 is a clone of the arcade game with several gameplay enhancements--with smoooooth, sharp graphics, it's better than the original! Pharaohs Curse is a clone of the original C64 classic. Diplomacy is a beautifully computerized version of the Avalon Hill board game--conquer or be conquered!

The AmigaWorld "Best-Of" Set

FD85ABCD: AmigaWorld's Best - These four disks contain the *hottest* p/d games! Includes Mother Lode, Moria, Minefield, Poing, Intruder Alert, Deluxe PacMan, Rocky and Super Artillery (see Dec. '92 AmigaWorld) Four disk set, counts as three.

FD81: SuperGames - Some of *the* best games--Donkey Kong is better than the original *with an extra level!* Frantic Freddie and TrailBlazer are both fast-paced arcade games. Mad Bomber is the classic game of "Kaboom" redone with an Amiga flare. All of these games are excellent!
FD82: Intrepid - In the Arctic ice, you control a tank on a mission to rescue hostages in this superbly crafted Amiga original.
FD84: Games! Deluxe PacMan is better than the original--20+ mazes, special "power-ups" with *oustanding* graphics. ThinkAmania is the classic game of concentration--with *beautifully* drawn HiRes images.

Workbench Disks

WB4:Telecommunication - This disk contains several excellent pd communication programs: Access 1.42, Comm 1.34 & Handshake 2.12a. See also WB102 & WB115.
WB5: Fonts #1- 35 bitmap fonts. Also included are five PageStream fonts,and ShowFont - a font display program.
WB6: Fonts #2 - ShowFont allows you to quickly and painlessly view all 256 characters in a typical font. Includes large AmigaDos system fonts (many up to 56pts).
WB7: Clip Art - This disk is loaded with black and white clip art. Art includes, trees, watches, tools, US and State maps, and more.
WB9: Icons - Truly a multitude of various types and kinds. Also includes IconMiester, IconLab, and others great utilities to help generate icons.
WB12: Disk Utilities - This great disk is loaded with wonderful utilities for everything including making disk labels, disk cataloging, disk optimizing, disk and file recovery archive and organizing, and all sorts of file manipulation. A must have!
WB13AB: Printer Drivers and Generator - over 70 different drivers (including HP LaserJet 3 & 4!), also includes a printer-driver generator. Two disk set counts as two.
WB15: Business - This disk contains a spreadsheet, a database, a project/time management program and financial analysis (stocks).
WB18: Word/Text Processors - This disk contains the best editors. Includes,TextPlus (v2.2e) a full featured word processor, Dme(v1.35) a great programmers editor with strong macro features,TexED(v2.8) an enhanced Emacs type editor, and a spell checker.
WB22: Fonts #3 - Several more great fonts. These, like the other font disks work great with Dpaint and WYSIWYG word processors.
WB23: Graphics and Plotting - Plot, a 3-D mathematical function plotter. Can plot any user defined function, BezSurf2 - produce awesome pictures of objects one could turn on a lathe. Can also map IFF image files onto any surface that it can draw. Now compatible with most 3D packages, and VScreen - makes a virtual screen anywhere.
WB25:Educational - On this disk are two programs that can generate maps of differing types, World Data Base uses the CIA's data base to generate detailed maps of any entered user global coordinates. Also Paradox a great demonstration of Albert Einstein General Theory of Relativity.
WB27: Nagel - 26 Patrick Nagel pictures of beautiful women.
WB33:Circuit Board Design - several terrific routines for the electronic enthusiast, Including PCBtool - a circuit board design tool, LogicLab - circuit logic tester, and Mcad (1.26) a well done new release of this PD CAD program, now comes with predrawn common circuit components for insertion into schematics.
WB35: 3D Graphics - This disk contains 3Fonts - Full vector font set for use with 3d programs, FontMaker - make 3d fonts from any system font, Make3DShape - create 3d shapes from any image, DumptoIFF - create 3d animations preserves pallet, World3d - a demo of a front end for use with DKBRender.
WB36: Graphics - On this disk are several programs to create stunning graphical images including, MPath - creates swirling galaxy images, Roses - produce an unlimited number of variations of images that a symmetrically similar to a rose, SimGen - display those spectacular images as part of your workbench, and RayShade - a very good raytracing program, create your own beautiful 3d graphic models with this one!
WB37: Educational - Educational games and puzzles that cover math, geography, spelling, and books. Ages 6 - 15
WB41: Music - MED an incredibly well done, full featured music editor. Create your own stunning music directly on your the Amiga. Similar to SoundTracker but better. Very powerful easy to use program. Version 3.20--compatible with WB2+.
WB43: Business - This disk contains AnalytiCalc - probably the most powerful spreadsheet program on the Amiga. A full featured spreadsheet with many features expected in a commercial package. Req. 1.2 MB

Special Product • New Release!!

QT3: The A64 Package *Version 3* - A very complete Commodore 64 emulator. Supports any CPU and is fully compatible with WB1.3 & 2.0 and now 3.0! This version includes a special adaptor that will allow you to connect your 64's 1541 disk drive to your parallel port of your Amiga for total emulation. All-new transfer software! Special price $59.95 -with hardware.

WB46: Clip Art - HighRes clip art with the following motifs - embellishments (borders, dodads ,...), people, & transportation.
WB47: Clip Art - Hires clip art. Motifs - hair, drafting, summer, animals and macfood.
WB48: Clip Art - Hires clip art. Motifs - Holidays, music, medical, and misc.
WB53: Graphics - Raytracing programs generate absolutely stunning realistic looking planes, rockets, buildings..., and surreal images. C-Light is the most powerful EASY-TO-USE of it's kind we have seen to date. This is easily better, and more full featured, than similar commercial programs costing in the hundreds of dollars. Also, sMovie - a full featured video text titler similar to ProVideo, Broadcast Titler. Great video scrolling, wipes, special effects, and more...
WB54: Printing - This disk contains several routines to help with the chore of printing. Includes Gothic - Finally a Banner printer for the PD! PrintStudio -a well implemented all-purpose printer-utility with a very comfortable graphic interface and many advanced features, Lila - with ease, print ASCII files to a PostScript printer, and more.
WB55: Application - XCopyIII - a full featured disk copier, make backups of copy protected disks. RoadRoute - find the quickest route from one city to another, highway description included. Diary - a diary program like "Dougy Houser M.D", Cal - a calendar program, Magman - a database tailored for articles and publications.
WB57: Animation - This disk has several "Demo" style animations, Including, Blitter, Lolly, Sun5, vertigo, vortex, and xenomorph.
WB62: Midi Utilities - Several useful midi utilities including, programs to transfer to and from several music programs to midi, a midi sysex handler, a midi recorder with timebase, display midi info, file sequence player, and a few scores.
WB63: Disk Utilities #3 - Several highly recommended programs to aid in removing duplicate files from your hard drive, performing file backups, Binary editing, fast formatting, file recovery, and forced disk validation of corrupt disks.
WB66: Icons #2- Lot's of neat icons. Also, several wonderful programs that to let you create your own icons, modify and manipulate icons and info structures.
WB69: Music - 90 minutes of classical and modern electronic music for you Amiga.
WB75: Music - over 100 instruments files (.inst) and sample sound files (.ss)
WB79: Home & Business Accounting - Includes Ckbacct - the most complete checkbook accounting program going, LCDCalc - this well done calculator has a very large display and operates from the keyboard or mouse, Mileage master - monitor your automobile mileage with this mileage log, Grammar - a grammar checker, and Worldtime - find out what time it is in up to 50 global cities.

WB119ABCDE: Font Set This collection contains over 100 typefaces for use with Professional Page/PageSetter 3+ or PageStream 2.1+. These fonts will output to any laser printer or dot-matrix printer with no jaggies, thanks to outline fonts. Very pro-looking. *5 disk set, counts as 4.*

WB81: Great Applications - DataEasy a very easy to use, database program. Don't let the ease of use fool you, this is a very full featured database program including full printer control for address labels and mail merge applications. Also includes, TypeTut a good typing tutor, RLC a full featured label printer, Banner, a multi-font banner maker, and Budget a home accounting in a program. Highly recommended.
WB82: Animations - Four full length, well done "movie" style animations. Including, Coyote, JugglerII, GhostPool, & Mechanix. 2 disks, counts as 1.
WB93: Workbench 1.3 Extras #2 Contains the utilities that Commodore should have shipped with the Amiga; VirusX4.0, Snap, FixDisk (recover corrupt/deleted files), Disk Optimizer (floppy & hard), MachIII (screen blanker, hotkey, mouse accel., macro, clock utility), GOMF (a gurubuster)and PrintStudio.
WB95: Checkbook Accountant 2.1 - Definitely commercial grade; we've seen many checkbook programs and this is the best. Full budgeting, transaction recording & report generation.
WB96: Dupers - Contains XcopyIII & Nib which will backup copy-protected programs. FreeCopy removes copy protection from several programs, and SuperDuper will crank-out fast AmigaDOS copies.
WB102: Telecommunications - Contains the programs NComm 2.0 and VT100-29B. Zmodem protocols, XPR protocol support, full VT100 emulation. NComm's script language is so powerful it can create a full-featured BBS system.
WB106: Home Manager - This is a great all-in-one address book with an autodialer/notepad/to-do list/appointment scheduler/home inventory database and phone number dialer.
WB108: OctaMED - This breakthrough program doubles your Amiga's sound capabilities from 4 channels to an ear-popping 8 channels! All the renound editing capabilities of MED plus 4 more channels! If you thought your Amiga sounded good before...you aint heard nuthin' yet!
WB109: VerseWise - Display, search and print The New Testament.
WB113: Sid II - Why pay 40 bucks for a directory utility, when this one will do it all plus much more! A truly professional-caliber program. Sid 1 was our best, now *completely* rewritten, Sid 2 will astound you.
WB114: Fonts #4 - Contains 36 bitmap system fonts.
WB115: Telecommunication - If you have AmigaDOS 2.04+ and a modem, then this is *THE* program for you. Term *totally* conforms to the User Interface Style Guide for 2.04, has an ARexx port, and supports all popular file-transfer protocols through XPR libraries. We wish all programs were this good.
WB116: Databases - This is what you've been waiting for! Contains 5 uniquely specialized database programs for tracking: Videotapes, CD's, Magazine Articles, Comic Books and Trading Cards!
WB120: Grinder - a complete graphics conversion package that supports GIF's, JPeg, Neochrome, Degas, PCX, Targa, TIFF, HAM-E and IFF format pictures. An invaluable tool for all desktop-videographers and desktop publishers.

WB118: Amiga Beginner - *You asked for it!* A complete tutorial for the beginner on using the Amiga. Starts you off at the power-switch and takes you through to the CLI/Shell and all points in between. *Bonus!* Also included are 16-color icons to replace *every* icon in your 2.0+ Workbench.

WB121: ProPage3/4 Enhancer - This disk contains over 40 "Genies" for use with ProPage 3+, including useful ones like Make Pie Chart and Resize Text to fit Box to name a few. Also includes structured & bitmap clipart for unique borders...a *must have* for all PPage 3 users.
WB122: System Optimizer - KCommodity enhances your system, gives memory meters, mouse/keyboard enhancements, online timers plus *many* others...too numerous to list! REorg will optimize hard and floppy-disks for a big speed increase. HDMem will allow you to use up to 2 megs of hard-drive space for virtual memory! (Req. 68020+ w/MMU) All programs require 2.0+.
WB123AB: Flags of the World - same as WB124, but for Workbench 1.3. Req. 1MB. 2 disk set, counts as two.
WB124: Flags of the World - Two modes: click and learn or a game to test your knowledge. Great graphics--fantastic learning tool. Has current Russia & Yugoslavia republics. Req. Workbench 2.0+ & 1MB RAM.
WB127: Blankers - Over 20 different screen blankers. Most run on Workbench 1.3+...a few require 2.0+
WB128: ColorFonts - contains 12 color bitmap fonts for use with DPaint or any software that supports ColorFonts.
WB129: Super Virus Killer - From Safe Hex Int'l, who catalogs and kills Amiga Viruses *worldwide*--a complete virus system that knows all Amiga viruses...updated often. Req. WB 2+
WB130: ToolManger 2 - The ultimate tool manager for your Workbench. Add animated icons, sound effects and 'docks' of programs to your WB..very useful! Req. 2.0+ and hard drive.
WB131: Magic Workbench - Make your 2.04+ Workbench sizzle with style with these 8-color dithered icons. Easy auto-installs in minutes. Req.'s WB2.04+ and hard drive.
WB132: Canon Studio Version 2 - Special printer Preferences editor and drivers for BJC 600, 800 & 880, LBP, A1, A2, BJC 800, BJ 5, 10, 20, 200, 230, 300, 130.
WB133: Panasonic Studio - Special printer Preferences editor and driver system for all Panasonic 9 & 24-pin printers.
WB134: 3.0/AGA Blanker - BlitzBlanker for WB3.0+ 14 different blankers to really show off your AGA machine!

Dev Disks

DD54: Compression - The best file compression programs and aids for the Amiga. Includes Arc, Lharc, Lhwarp, Pkax, PowerPacker a must have by all, Zip, Warp, and Zoo.
DD71AB: C Compiler - This disk contains DICE, Matthew Dillon's full featured, powerful C compiler & environment. 2 disks, counts as 2.
DD79abcd: Amiga "C" Tutorial - This is the most comprehensive C language--*Amiga oriented*--set of tutorials available. Includes full working examples, source code and an incredible set of lessons. Included are full discussions and examples for Amiga programming. 4 disk set, counts as 3.
DD86: The Programmer - Includes GadTools and REQTools which will allow you to create your user interfaces and then the program will automatically generate "C" source code or Assembly-code. Requires, and writes code for, AmigaDOS2+.
DD89: UEdit - Probably *the* most powerful text editor for the Amiga. Previously commercial, now public domain. 1 MB.
DD91: ParBench - Allows you to easily connect/network two Amigas/CDTVs together and share storage devices. Req's custom cable (docs to make cable included--easy).
DD90: Advanced Utilities - CompressDisk doubles the capacity of your hard-drive on the fly with compression!!! Also contains: disk optimizer, SCSI mount utility, Keymap editors, Enforcer, Undeleter & more. Most programs require 2.0+.

Video Disks

VO9: Imaging - Included on this disk are the indispensible utilities, Rend24, ViewTek and the JPEG utilities. Rend24 is invaluable for 24-bit animators allowing for previews on AGA and non-AGA Amigas. ViewTek plays back anims of all sorts including Anim 5, 7 and 8 formats.

← Check out our DevWare Video ad for order info, or **ORDER TOLL-FREE (800) 879-0759!**

Circle 42 on Reader Service card.

From p. 64.

So what's the matter? Well, Tornado is rather slow. And I'm not talking about on the standard A500 or A1200. An '030 processor is recommended, but I suspect an '040 would be ideal. It is slow on an A3000 running at 25 MHz, slow on an A500 running at 40 MHz and just a bit slow even on a fast-RAM-heavy, '030-based A1200. Don't get me wrong—it's fast enough to be entirely playable on an '030—but anyone exposed to FDP2's silken ride and solid surfaces is likely to find Tornado's dithered graphics and bumpy screen update wanting, and I just wish they'd finessed the Amiga version a bit more. (A Digital rep says that better speed will be one of the improvements in the forthcoming Amiga 1200 version.)

F117A Stealth Fighter 2.0, on the other hand, represents something of a return to flight-sim form for ***MicroProse UK*** after the ponderous B-17 and drab Dogfight. (By the way, I've since been informed by a reader that B-17's speed problems are accelerator-related, ironically enough, and that it works much better under the utility program Enforcer.) It's a very clean conversion of the IBM original—quick to get in, quick to get out, and good fun while it lasts—operates well even on a basic machine, is NTSC compatible, and offers a nice range of scenery and airborne activity. (The intro's smart-bomb attack on a hangar is a treat as well.)

However, it's also something of a throwback to the days of F-15 Strike Eagle II. That's nice in some ways—like that game, it's very playable—but it's also burdened by a clunky dashboard, somewhat ragged movement and split seams when turning, and a limited palette even in daylight missions. Not bad, MPS, but it's time for an update.

SHORT TAKES

Cool Spot

B+ | 1.3 ✓* | 2.0 ✓* | 3.0 ✓*
Not hard-drive installable. Copy-protection.

You remember Spot, right? 7 Up's trademark character—a red dot with Ray-Bans, a Mr. Natural walk, and Mickey Mouse gloves? He last lent his name to a Go variation published by Virgin around 1990, and now he's back as the main character of an arcader of which he's more than just host, and much better suited.

I've held forth before on artless merchandising in Amiga games before, but I'll shut up about it here, as this entry (*Virgin UK*, about $35) is really rather good. Its greatest asset: It doesn't do anything twice, it does enthusiastically everything it elects to do (the animations are consistently charming), and it choses its source material wisely. (The opening beach level appears to take off from LucasArts' Star Wars games for the Super NES.) I never knew quite what was coming next, and I was never disappointed. Could this be the Un-Arcader?

Caveat: You may have to experiment a good deal with Degrader or its equivalent to get Cool Spot to fizz to life. The load is long, but it does work.

No Second Prize

A | 1.3 ✓* | 2.0 ✓* | 3.0 ✓*
Not hard-drive installable. Copy-protection.

Were Fighter Duel to descend to earth and, in the fashion of Japanese robots, morph into a motorcycle game, it would surely turn into No Second Prize (*Thalion USA*, $29.95)—a racing sim that fairly flies down the track on even the most basic Amigas.

I saw that skeptical look. And you're within your rights. Polygons and motorcycles haven't mixed particularly well to date—Team Suzuki and Red Zone crashed better than they rode—but this is something else entirely. You tear down the track without a trace of frames going by—the flow here is absolutely liquid—and this with not a little in the way of track-side scenery. The mouse control is entirely intuitive, off-road is properly bumpy, the intro is lovely, and the whole thing just breathes class.

OK, the game doesn't have great depth of field (cycles disappear in the distance too early) and the little hills look as though they've been superimposed on the track. Perhaps this is all just a stylish programming trick rather than a full 3-D world. But if so, it works like a charm. On the turns, you will be leaning in your chair.

Zool 2

A | 1.3 ✓ | 2.0 ✓ | 3.0 ✓
Not hard-drive installable. Copy-protection.

We are in the presence of greatness. All the superlatives wasted on the disappointing Zool apply most vigorously to Zool 2 (*Gremlin Graphics*, about $35), which I'd rate as the best pure platform game of 1993.

Here, at last, the little ninja comes into his own. The artwork is arcade-gorgeous; the levels vast, elaborate, and varied in architecture; and there's a cumulative bigness of spirit here—a suggestion of distant horizons—that keeps calling you back into the fray. Zool was a trifle. Somehow, Zool 2 feels as though it matters, and that's unheard of in a platform game.

Alas, it seems to balk at loading on any machine with a hard disk or '030 (or both; I couldn't tell), and the action does slow down somewhat when there's a lot of stuff moving on the screen (as there often is). That'll all probably get fixed in the inevitable A1200 version, but there's really not much more they could add. As it is, Zool 2 is damn near perfect.

KGB

A– | 1.3 ✓ | 2.0 ✓ | 3.0 ✓
Hard-drive installable. Off-disk copy-protection.

Welcome, comrade. *Virgin* has taken its own sweet time about it, but the US division has finally brought out a domestic edition of this taut and absorbing graphics adventure. Set in a distintegrating Soviet Union, KGB casts you as a newly transferred intelligence agent prowling Moscow's seamy underbelly. If now somewhat dated—Gorbachev was in power when this first surfaced—it's still top-notch.

Really, what's not to like? KGB is nice and tough in a reasonable, non-adventure-gamey way. It doesn't pull punches over subject matter. The first-person view is an original touch. The click-me interface is teflon. And French developer Cryo has shown its customary respect both for the Amiga's abilities and the range of machine configurations.

And, most of all, I admire KGB for always keeping its head; it's a regular bear for consistency. Immersed in its story, characters, and milieu, not once does it fall into traditional adventure-game tricks and traps. Nor does it use a cliché without also letting the steam out of it along the way. And not once does it set us up for a payoff it can't deliver. You'll rarely be disappointed here . . . and you'll never see red. ►

To locate vendors of the games reviewed, see the "Manufacturers'/Distributors' Addresses" list on p. 78.

ANTI GRAVITY PRODUCTS

456 Lincoln Blvd, Santa Monica, CA 90402
TEL (310) 393-6650 FAX (310) 576-6383

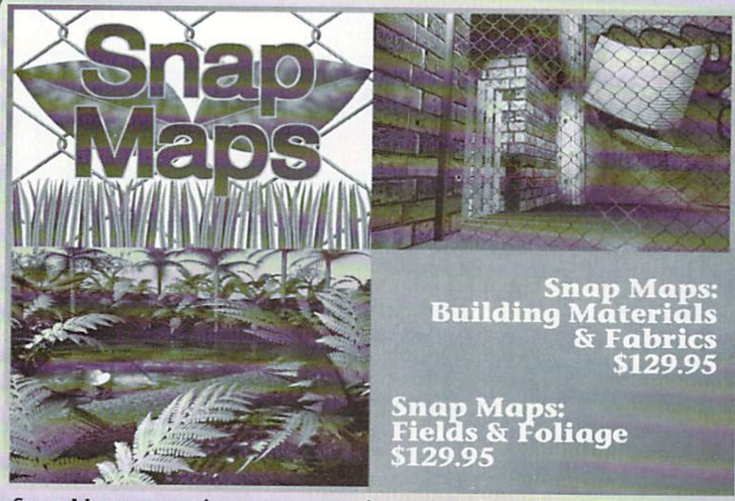
Call for shipping rates, warranties, and other policies that apply. Quantities are limited and prices are subject to change without notice. Returns must have a RMA number, be in original packaging and condition, and are subject to a 20% restocking fee. No guarantees are implied as to product performance with your system or as to manufacturers claims and specifications. Federal Express logos used with permission.

Federal Express Delivery Available!

FEDERAL EXPRESS

SOFTWARE

AccuTrans-3	$65
Art Department Pro 2.5	$175
Adptools Proffesional	$Call
Alladin 4D Ver. 3.0	$245
Animworkshop Ver. 2.0	$Call
AsimCDFS	$60
Dynamic Motion Module	$140
Essence I	$50
Essence II	$50
Forge	$Call
Image Fx	$215
Imagine 3.0	$495
Newton's Law	$185
Magic Lantern	$55
Montage	$320
Multiframe	$65
Multilayer Adpro	$Call
Pagestream 2.2 Free 3.0	$160
Pegger	$99
Pixel 3D Professional 2.0	$99
Real 3D Ver. 2.0	$395
Scenery Animator Ver. 4.0	$54
Sparks	$115
Typesmith Ver. 2.0	$120
Vista Pro Ver. 3.0	$54
Wavelink	$100
Wavemaker	$160



Snap Maps are unique textures that trim 3D surfaces into new shapes! Snap Maps integrate 24-bit color maps with bump and clip maps to simulate complex structures! Save memory and modelling time in creating photorealistic scenes. Plus tutorial scenes for Lightwave, Imagine, and Real 3D **.Each Only $129.95**

WARP ENGINE

Is a 040 Accelerator with a High-Speed SCSI-2 controller & upto 128MB of ram expansion All-In-One!

WARP-28MHZ	
no CPU (use the 040 from your A4000)	$ 825
with an 040 CPU	$ Call
WARP-33MHZ	
0 MB Ram	$ 1315
with a 4MB 60ns SIMM	$ Call
WARP-40MHZ	
0MB Ram	$ Call
with a 16MB 60ns SIMM	$ 2395
with a 32MB 60ns SIMM	$ 3150

We Accept VISA MasterCard

Imagine 3.0 Now Available Amiga or PC $495

HARDWARE

Chromakey Plus	$395
G-Lock	$375
Kitchen Sync	$1275
Nova Y/C	$475
Personal Editor	$425
Personal SFC 2.5	$395
Power HD Floppy	$175
Studio16 3.0 AD516	$1185
Supergen SX	$690
TBC Plus	$795
Tocatta 16	$CALL
VLab Y/C	$450
Warp Engine	$CALL

SyQuest Removable

SyQuest Drives:	88C	105	200	270
IDE Bare Drive	$ N/A	$ 265	$ N/A	$ 415
SCSI Bare Drive	$ 285	$ 265	$ 425	$ 430
External w/Cart.	$ 455	$ 435	$ 645	$ 635
Cartridges:	88MB	105MB	200MB	270MB
1 each for	$100	$ 70	$120	$100
5 each for	$ 93	$ 65	$110	$ 95



Amiga 4000 SyQuest Internal IDE Drive Kit with Cartridge.

DATAFLYER-105SQ 105MB	$ 395
DATAFLYER-270SQ 270MB	$ 545

Big Byte Super Buys!

FMT	DRIVE	SZ.	SPEED	PRICE
270MB	Quantum LPS270	3.5LP	10ms	$ 250
500MB	Conner CFA-540S	3.5	9.5ms	$ 495
540MB	Quantum LPS540	3.5LP	10ms	$ 485
1.0 GB	Quantum EMP1080	3.5LP	9ms	$ 795
1.0 GB	Conner 1060	3.5	9.5ms	$ 795
1.0 GB	IBM	3.5	8.6ms	$ 795
1.0 GB	Micropolis 2210	3.5	10ms	$ Call
1.7 GB	Micropolis 2217	3.5	10ms	$ Call
1.8 GB	Quantum Pro1800S	3.5	10ms	$1150
2.0 GB	IBM	3.5	9.2ms	$1350
2.9 GB	Seagate Elite-3	5.25	11ms	$2150
8.9 GB	Seagate Elite-9	5.25	11ms	$5850
20 GB	TAPE DRIVE	5.25	2.5MB/sec	$3995

24-Bit DISPLAY BOARDS

RETINA	4 MB	$ 540
PICASSO II	2MB	$ 520
SPECTRUM EGS		$ 495

IDEK MONITORS

GREAT TOASTER MONITOR 17" 5017 15-38KHz	$Call
NEW 17" 8617 1280x1024 23.5-86KHz	$795
NEW 21" 8621 1280x1024 23.5-86KHz	$2395
21" 9021 1600x1280 24-90Khz	$ Call



Network It for $295

Add A Picassoll 2MB & 17" IDEK Monitor for $1320

A4000-25MHz-040/6/0 HD	*$ 1975*
A4000-25MHz-040/6/500MB HD	*$ Call*
A4000WARP: 40MHz-040 10MB Ram, SCSI-2, 500MB HD	*$ Call*
A4000TURBO: 40MHz-040 10MB Ram, IDE, 500MB HD	*$ Call*

CHEAP EXTERNAL



No Caddy Needed it has a POP-UP case and a Headphone jack.

$ 285 PLUS

! FREE !! ASIM-CDFS & Fred Fish Gold for a limited time while supplies last

ITS CD-ROM TIME

Cheap CD rom	350ms, 150KB/sec $200
Toshiba XM340IB	200ms, 330KB/sec $385
NEC TRIPLE SPEED	195ms, 450KB/sec $420
ASIM CDR File System 2.0	$ 55



Texture City Pro-100 #1 CD Rom 24-bit Textures for Amiga, PC, Mac, SGI in Tiff-Targa-Pcx-Iff format

CD Rom $ 69

Pro-60 sets #1 & #2 Amiga 3.5" Jpeg each for $ 69



A4000Toaster Warp System:
40MHz-040
SCSI-2
4.3GB HD
38MB Ram
Picassoll
17" IDEK
$ Call

Give us a !SCREAM! IF you want to hear about the



RAPTOR
Lightwave Renderer

$ Call



Run LightWave without the Toaster by using LIGHT RAVE to emulate the Toaster environment.

Receive LightRave for $345 with the purchase of a Video Toaster 4000 or 3.1 upgrade software!

DIGITAL PROCESSING SYSTEMS INC.

PERSONAL ANIMATION RECORDER (PAR): 24-Bit Real Time Video Playback/Recorder *(S-Video, NTSC, Beta/MII, PAL Ver Available)*

Amiga	NTSC	$ Call
	PAL	$ Call
PC (ISA bus)		$ Call
PAR HARDDISKS		
500MB		$575
1.0GB		$845
1.7GB		$ Call



PERSONAL COMPONENT ADAPTER: *Beta/MII Decoder*	$ 490
PERSONALTBC IV (NTSC): *use with PAR to record video*	$ 820
PERSONAL TBC II VT-3000 (PAL): *use with PAR to record*	$ Call
PERSONAL V-SCOPE: *for Amiga & PC*	$ 750
DPS-210: *Video Signal Transcoder (NTSC)*	$1450

SIDELINE SOFTWARE

orders 1-800-888-9273 only

840 N.W. 57th Court, Ft. Lauderdale, FL 33309 Need Info? Call (305) 491-9519

New Additions are in Red Type

4-D Sports Boxing	21.95
4-D Sports Driving	21.95
688 Attack Sub	18.95
A-Train	26.95
Abandoned Places 2	26.95
Action Stations	19.95
Addam's Family	18.95
Afrika Korps	16.95
Alfred Chicken (regular or AGA)	21.95
Alien Breed Special Edition	24.95
Aliens 3	18.95
Ancient Art of War In The Skies	29.95
Another World	21.95
Aquaventura (Psygnosis)	18.95
Arabian Knights	18.95
Assassin Special Edition	21.95
Barbarian 2 (Psygnosis)	16.95
BAT II	18.95
Battle Hawks 1942	21.95
Battle Isle	18.95
Battleship	12.95
Battletech	18.95
Beavers	18.95
Birds of Prey (Electronic Arts)	24.95
Black Crypt	21.95
Blackjack Academy	16.95
Blob (Core Design)	21.95
Blues Brothers	21.95
Brutal Sports Football	24.95
Budakhan	18.95
Cadaver and Data Disk	21.95
California Games 2	16.95
Celtic Legends	18.95
Championship Manager '93	21.95
Chaos Engine / or AGA	26.95
Chaos Strikes Back	18.95
Checkers, Chess, Backgammon	18.95
Chessmaster 2175	18.95
Chuck Rock 2	21.95
Cohort Fighting for Rome	18.95
Combat Air Patrol (Psygnosis)	26.95
Conan the Cimarron	18.95
Conflict in Korea (SSI)	19.95
Conflict in the Mideast (SSI)	19.95
Cool Croc Twins (with T-shirt)	21.95
Covert Action (Microprose)	18.95
Crazy Cars 3	21.95
Cruise for a Corpse	18.95
Cyber Empires (SSI)	18.95
Cycles (Accolade)	16.95
D-Generation AGA	21.95
Days of Thunder	16.95
Defender Of The Crown	16.95
DeLuxe Productions	19.95
DeLuxe Strip Poker 2	18.95
Deuteros	21.95
Diggers AGA	24.95
Doodle Bug	18.95
Double Dragon 3	18.95
Dune	21.95
Elvira 2	21.95
Eye of the Beholder 1 (SSI)	19.95
Eye of the Beholder 2 (SSI)	24.95
F-1 Racing (Vroom 2)	24.95
F-15 Strike Eagle 2	24.95
F-16 Combat Pilot	16.95
F-16 Falcon (Spectrum Holobyte)	18.95
F-19 Stealth Fighter (Microprose)	21.95
Face Off Ice Hockey	16.95
Fairy Tale Adventure	16.95
Feudal Lords	18.95
Fighter Bomber	14.95
Fireteam 2200	18.95
Fool's Errand	16.95
Gauntlet 3	18.95
Global Effect	18.95
Goal	18.95
Grand Prix Circuit (Accolade)	18.95
Great Napoleonic Battles	18.95
Hardball 1	16.95
Hardball 2	18.95
Harlequin	18.95
Harpoon	19.95
Hero Quest (Gremlin)	18.95
Hillsfar (SSI)	16.95
Hoyles Book of Games 1/2/3, each:	18.95
Indiana Jones Graphic Adventure	18.95
Indianapolis 500 (Electronic Arts)	19.95
International Ice Hockey	16.95
Ishar 2 AGA	24.95
It Came From The Desert 2	16.95
Jack Nicklaus Greatest 18	16.95
Jaguar XJ 220	21.95
James Pond	16.95
John Madden Football	24.95
Knights of the Sky (Microprose)	18.95
Knightmare	21.95
Laser Squad	12.95
Legend (4 Crystals of Trazzar)	21.95
Legend of Valor	24.95
Lemmings 1	16.95
Lemmings 2	28.95
Links Golf	24.95
Lionheart	21.95
Loom (Lucasfilm)	19.95
Lotus Turbo Challenge 2	19.95
Lotus Turbo Challenge 3	21.95
M-1 Tank Platoon (Microprose)	21.95
Maniac Mansion	18.95
Megatraveler 2	18.95
Mercenary 3	18.95
Microprose Golf (Greens)	24.95
Mig 29 Fulcrum	19.95
Millenium Return to Earth	16.95
Monty Python	16.95
Napolean 1 (Intercine)	18.95
New Zealand Story	16.95
Nigell Mansell Grand Prix	21.95
Obitus (Psygnosis)	18.95
Overrun (SSI)	16.95
Pacific Islands (Team Yankee 2)	21.95
Pacland	16.95
Palladin 2	16.95
Panza Kick Boxing	18.95
Paperboy 2	19.95
Parasol Stars (Rainbow Island 2)	21.95
Pictionary	16.95
Pirates!	19.95
Pit Fighter	18.95
Police Quest III (Sierra)	19.95
Populous/Promised Lands	21.95
Power Monger & WW1	21.95
Premiere	26.95
Prince of Persia	16.95
Project X	21.95
Pushover	21.95
Putty	24.95
Quack (Team 17)	24.95
R-Type 2	18.95
R.B.I. Baseball 2	18.95
Railroad Tycoon	24.95
Rainbow Island	18.95
Reach for the Skies	29.95
Red Zone (Psygnosis)	18.95
Revenge of Defender	9.95
Risky Woods	21.95
Robocod Regular and AGA	18.95
Robocop 3-D	26.95
Robosport (MAXIS)	24.95
Rodland	18.95
Secret of Monkey Island	21.95
Seek and Destroy	24.95
Sensible Soccer '93	24.95
Shadow Lands	18.95
Shadow Worlds	18.95
Shufflepuck Cafe	16.95
Silent Service 2	24.95
Sim Ant	26.95
Sim City	21.95
Sim Earth	26.95
Sim Life / Sim Life AGA	24.95
Soccer Kid	21.95
Space 1889	14.95
Space Crusade	21.95
Special Forces (Microprose)	24.95
Speedball 2	18.95
Spoils of War (Intercine)	18.95
Street Fighter 2	24.95
Strike Fleet	19.95
Stunt Car Racer	16.95
Super Space Invaders	18.95
Super Sqweek	14.95
S.W.I.V. (Silkworm 4)	18.95
T.V. Sports Baseball	21.95
T.V. Sports Boxing	21.95
T.V. Sports Football	18.95
Team Yankee	21.95
Terminator 2	18.95
The Immortal	19.95
The Jetsons	16.95
The Simpsons	18.95
The Three Stooges	18.95
Their Finest Hour	21.95
Toki	16.95
Tom Landry Pro Football 2	24.95
Torvak the Warrior	16.95
Traders (Mule Clone)	18.95
Traccon 2	26.95
Trivial Pursuit Genius Ed.	16.95
Troddlers	18.95
Trolls or Trolls AGA	18.95
Turrican 2	18.95
Turtles 2 The Arcade Game	18.95
Typhoon Of Steel (SSI)	18.95
Ultima 5	21.95
Utopia	21.95
Walker (Psygnosis)	24.95
War in the Gulf	18.95
Warhead	16.95
War Zone	16.95
Waterloo	16.95
White Death (Intercine)	18.95
Wiz Kid	18.95
Wiz and Liz (Psygnosis)	21.95
World Boxing Manager	18.95
Worlds at War (Intercine)	18.95
Worlds of Legends (Legend 2)	24.95
W.W.F. 2 Euro Rampage	24.95
Xenon 2 (Megablast)	14.95
Zak McCracken	18.95
Zool	19.95
Zool AGA (A-1200)	24.95
Zool 2	24.95

NEW TITLES

Alien Breed 2 or Alien Breed 2 AGA	35
Amazon Queen	40
Amber Moon	40
Apocalypse	27
Battle Toads	35
Beneath a Steel Sky	40
Body Blows 2 or Body Blows 2 AGA	35
Cannon Fodder	35
Chaos Engine AGA	35
Civilization (AGA)	42
Dark Mere	35
Elite II	35
F-117A Stealth Fighter	42
Genesia	35
Global Domination	38
Heimdall 2	40
K240	35
King Maker	38
Kings Quest 6 (Sierra)	42
Legacy of Sorasil	35
Liberation	35
Maelstrom	40
Mortal Kombat	35
Out To Lunch	35
Raiden	35
Rules of Engagement 2	38
Second Samurai or AGA	35
Sim City 2000	Call
Simon the Sorcerer & AGA	42
Skid Marks	35
Syndicate	38
TFX	42
Terminator 2 (Coin Op.)	35
The Blue and the Gray	40
The Settlers	38
Tornado Flight Simulator or AGA	42
Total Carnage or AGA	35
Turrican 3	35
Twilight 2000	40
U.F.O. (Microprose)	42
Ultimate Pinball Quest	38
When Two Worlds War	38
Wing Commander	27
Winter Olympics (Lilehammer 94)	38
Zool 2 AGA	35

While They Last!

$6.95 Each, or Any 3 for $20! All Sales Final!

Thunder Jaws
Cardiax *
Night Shift
Night Hunter
Hudson Hawk *
Ranx
Armada
Borodino
Death Bringer
Megaphoenix *
James Bond Stealth Affair
Hagar the Horrible
Faces (Tris 3)
Alpha Waves
Deadline
Bushbuck Treasure Hunter
Heart of the Dragon
Dark Castle
Zoetrope
20,000 Leagues Under Sea
Bravo Romeo Delta
Under Pressure
Continental Circus
Gem-X*
Ninja Remix
Dojo Dan

* = requires AGNUS chip.

MULTIPACKS

COIN-OP HITS 2
Includes: Ninja Spirit, Dynasty Wars, Hammerfist, Vigilante, Ghouls and Ghosts
ALL FOR $24.95

LORDS OF POWER
Includes: The Perfect General, Red Baron, Silent Service 2, and Railroad Tycoon
ALL FOR $49.95

POWER PACK
Includes: T.V. Sports Football, Xenon 2, Bloodwych, amd Lumbard Road Rally
ALL FOR $29.95

FUTURE CLASSICS
Includes: Tank Battle, Diet Riot, Lost Maze, Disc Man, and Blocker Lanch
ALL FOR $14.95

COMBAT CLASSICS
Includes: 688 Attack Sub, F15 Strike Eagle 2, Team Yankee
ALL FOR $34.95

NINJA COLLECTION
Includes: Double Dragon, Dragon Ninja, Shadow Warrior
ALL FOR $14.95

EXCELLENT GAMES
Shuttle, Populous 2, James Pond 2, Archer McClein's Pool
ALL FOR $49.95

PHANTASY PACK
Includes: Phantasy 1, Phantasy 3, Questron 2

CD32 TITLES IN STOCK

Most Titles $35!
Alfred the Chicken, Castles 2, D-Generation, Elite 2, Gunship 2000, Super Methane Brothers, James Pond 2, Labyrinth of Time, Liberation, Nigel Mansell, Nick Faldo's Golf, Pirate's Gold, Pinball Fantasy, Lotus Trilogy Morph, Mean Arenas, Trolls, Sensible Soccer, Brutal Sports Football, T.F.X., Seek and Destroy, Chaos Engine and Fireforce, Defender of the Crown 2, DONK, Total Carnage, Global Effect, Premier, Ryder Cup, Alien Breed 2, Fire and Ice, Gunship 2000, Zool 2, Microcosm.

EUROMAGS

Amiga Format, C.U. Amiga, Amiga Games, Amiga Action, Amiga Computing, Amiga User International, Amiga Power, CD 32 Gamer
ALL WITH DISKS- $10 each
Amiga Shopper-no disk $7

Fax (305) 491-6134

SHIPPING (UPS Ground) For up to 3 pieces, by payment:
Mastercard & Visa $5.00 • C.O.D. (Cash Only) $10.00
Next day air add $10, 2nd day air add $5, 3 day air add $3 to basic rate.
Shipping times not guaranteed. COMPATIBILITY NOT GUARANTEED.
DEALER INQUIRIES? Call 305-491-0398.
Nothing is etched in stone. Everything is subject to change.

Price & Availability subject to change at any time!
No refunds or exchanges. Defective products exchanged with same item, but subject to Sideline approval. CALL FIRST!
U.S. products warrantied through manufacturer.
U.K. products warrantied through Sideline.
NOT RESPONSIBLE FOR SOFTWARE PERFORMANCE.

T2: The Arcade Game

C+
1.3 ✓
2.0 -
3.0 -
Not hard-drive installable. Copy-protection.

The trouble with Operation Wolf-type shoot-'em-ups—essentially, sideways-scrolling target ranges—is that once you get over the rush of juice from their close resemblance to the arcade originals, you have pretty much seen everything that this game has to offer.

So it is in T2 (*Virgin UK*, $35)—the second Amiga game to be born of the second Terminator movie. This conversion of the standup looks and plays very like the original frenetic shooting gallery, and, like the cabinet model, it is wanting as a game. You'll enjoy it for the first 15 minutes or so, with metallic, grinning Terminators distintegrating before your very eyes and wasting lots of recyclable scrap metal. Then you will notice that the second 15 minutes is a whole lot like the previous 15, except that it requires more bullets, weapons, greater speed, and better aim. Aren't you excited? (That said, T2's still much better than the movie's other, more timely hellspawn: the Ocean platform game.) ■

CD32: Cool Captures

The two games in the original European CD32 bundle have been released separately by their publishers (**Diggers** from ***Millennium*** and **Oscar** from ***Flair***) and both bear up OK in the new context—especially the Lemmings-like mining game Diggers (B-).

And while Oscar's hardly Sonic, this platformer is at least a graphical tour-de-force (C+).

Odd that **Morph**—a nice arcade-puzzler from ***Millennium*** built around changes in elemental states—should itself go through so few changes en route from the original. This has the 12 extra levels from the A1200 version, and I suppose the music's a bit better (B).

Arabian Nights for CD32 (***Buzz***) has barely changed from its original Amiga release, and a good thing, too. The original platform/puzzler was brilliant in its simplicity, and why mess with a good thing (B+)?

The platformer **Trolls** (***Flair***) has most of the qualities you probably liked in its younger brother, Oscar—except maybe a sympathetic character. Play's a bit thin, but gotta love the backdrops, and the jaunty, let's-go-rollerskating music has been punched up significantly (B-).

Nigel Mansell's Championship Racing (***Gremlin Graphics***), released for the CD32 in tandem with Zool, also crawled from the same swamp. Ick (D+).

Sensible Soccer (***Renegade***) is the most highly-rated soccer game ever released on the Amiga. Sensible Software didn't have to do anything much in bringing it over to the CD32, and it hasn't . . . for better or worse (B).

John Barnes European Football (***Buzz***) doesn't even deserve to be mentioned in the same breath as Sensible. I flout this restriction this time because it was the first sports game for the CD32, and that's likely to be the last time this hard-to-control and ugly soccer game will be first at anything (F).

Shame that the big-sprite platformer **Deep Core** (***ICE***)—the disk version of which was semi-panned a couple of issues back—didn't turn up in this format first, as it's much more on target playwise (B).

The tour-de-force graphics adventure The Labyrinth has finally turned up as **The Labyrinth of Time** (***Electronic Arts*** UK, about $45). It works fine on the CD32—and naturally is faster—and all the superlatives (and the few reservations) heaped on it in the preview last September still apply (A-).

Editor's Note: Thanks to British Magazine Distributors for providing some of the games reviewed this issue. □

AN AMIGA 1200 TWICE THE SPEED OF AN A4000/030 OR A3000 SYSTEM???
PURCHASE THE 50MHZ ACCELERATORS AND FIND OUT FOR YOURSELF!

* FREE 2 DAY DELIVERY ON CSA & MICROBOTICS PRODUCTS TO THE 48 STATES* *NO SALES TAX IN DELAWARE*

AMIGA

A4000 Computer/68040	**CALL**
A4000 Computer/68030	**CALL**
A1200 Computer	395
w/40MB HD Installed	535
w/65MB HD Installed	559
w/85MB HD Installed	619
w/130MB HD Installed	699
w/235MB HD Installed	799
***1942 Monitor**	**CALL**
*1084S Monitor	CALL
A520 Video Adapter	34
A2088 XT Bridgecard	69
A2286 AT Bridgecard w/1.2MB High Density Floppy & MSDOS 5.0	299
2 MB Ram For 2091	96
Janus 2.1 Update	49
A2000/3000 Disk Drives	79.95
A500 Int. Disk Drives	49.95
A600/1200 Keyboards	29.95
A2000/3000 Keyboard	79.95
A2000/3000 Power Supply	109
External case PS & Cables	99
Beetle Mouse	29.95
External High Density	169

CD 32
NOW AVAILABLE

Zool CD32	39
Mean Arenas CD32	39
Trolls CD32	39
Robocod CD32	39

Call for other available titles

AMIGA CUSTOM CHIPS

2.05 Kickstart Rom	39.95
2.04 Kickstart Rom	32.95
1.3 Kickstart Rom	22
1MB Agnus (8372A)	37.50
2MB Agnus (8372B)	99.95
Super Denise (8373)	28.95
Paula (8364) Or Denise	18.95
CIA (8520)	8.50
Gary (5719)	13.95
2620/2630 Upgrade Kit	49
2091 Upgrade Eproms 7.+	49
Superbuster (-11) (4091)	99
Ramsey (A3000)	99
Fat Gary (A3000)	49
Super Dmac (A3000)	99
Amber (A3000)	79
A3000 Daugterboard	99
2.1 Upgrade Kit	99
2.1 Software Only	79

VIDEO

DPS Personal TBC III	699
DPS Personal TBC IV	799
DPS PAR w/Software	1549
SEAGATE SG3655A	499
DPS Personal Component	399
DPS Personal V Scope	729
Kitchen Sync	1199
Opal Vision 2.0	395
DCTV-NTSC	274
Retina w/4MB	549
Vlab Y/C	449
Vlab Int/Ext Comp	379/499
Montage	325
Deluxe Paint IV AGA	119
Morph Plus	139
Art Department Pro 2.5	139
Scala 3.0	289
Video Director	129
Caligari 24	139
Aladdin 4D	249
Video Toaster 3.1 Upgrade	499
Video Toaster 4000 3.1	1995
Picaso w/1MB-2MB	439/495
Light Rave 3.1	399

Microbotics

M1230XA ACCELERATOR

68030 25Mhz CPU w/MMU&Clk	249
68030 33Mhz CPU & FPU & Clk	299
68030 40ECMhz CPU & Clk	299
68030 50Mhz CPU w/MMU&Clk	349

MBX 1200z COMBO BOARD

68881 RC20Mhz FPU w/Clock	125
68882 RC33Mhz FPU w/Clock	199
68882 RC50Mhz FPU w/Clock	249

8-Up! FASTRAM BOARD

16 Bit ramboard expandable to 8MB by adding 2MB at a time using 16 1x1 dip chips.

16 Bit Board w/0MB Ram	99
16 Bit Board w/2MB Ram	149
16 Bit Board w/4MB Ram	229
16 Bit Board w/6MB Ram	309
16 Bit Board w/8MB Ram	389

Simm version available, + 20 to prices.

CSA's 12 Gauge Accelerators

33Mhz w/MMU & SCSI Board	399
w/4MB 80-70NS Ram	549
33Mhz w/MMU & FPU & SCSI	649
w/4MB 80-70NS Ram	799
50Mhz w/MMU & SCSI Board	499
w/4MB 60NS Ram	688
50Mhz w/MMU & FPU & SCSI	634
w/4MB 60NS Ram	825

IO MEGA's 150 MB REMOVABLE HD

Easy SCSI Hookup w/18MS Access!

Internal Version	449
External Version	549

VXL * 30 ACCELERATOR

68030 & 32 Bit Wide Ram For The A500/2000!

VXL 30: 25 & MMU Mhz $160 w/68882 25FPU $235; 40EC Mhz $225 w/FPU $354; 33 Mhz & MMU $225 w/FPU $324

VXL 32 RAM: 2MB $249; 8MB $875

3.5" HARD DRIVES

QUANTUM

LOW PROFILES - Warranty		
42 ELS SCSI	2 Yrs	99
127 ELS SCSI	2 Yrs	189
170 ELS SCSI I&II	2 Yrs	225
270 ELS SCSI I&II	2 Yrs	275
340 ELS SCSI I&II	2 Yrs	349
525 LPS SCSI I&II	2 Yrs	549
540 ELS Empire	5 Yrs	499
1080 ELS Empire	5 Yrs	799
1800 Pro Drive	5 Yrs	1075

MICROPOLIS

5.25" HH 660 SCSI I&II	599
2210S 1.2G SCSI I&II	799
2210A 1.2G IDE	799
2210S A/V 1.2G SCSI I&II	899
2217S A/V 1.7G SCSI I&II	1199
2217A 1.7G IDE	1099
2217S 1.7G SCSI I&II	1099
4110S 1.2G SCSI I&II 8.5MS	849
1936 3.0G SCSI I&II	1999
1991 9.0G SCSI I&II	5049

MAXTOR

Maxtor 120 LPS SCSI/IDE	175

MAXTOR 540MB 8.5 MS ACCESS ONLY $399

2.5" A1200/600 Hard Drives

SG9051A 40 Seagate/CN	139
SG9077A 65 Seagate/WD	159
SG9096A 85 Seagate	235
SG9145AG 127.9 Seagate	299
Maxtor 250MB 2.5" HD	369

MEMORY CHIPS

All Speeds Available

1x8 120-60ns SIMMS	39+
4x8 120-60ns SIMMS	139+
1x4 100-60ns Static ZIP	19+
1x4 100-60ns Page ZIP	19+
1x4 100-60ns Page DIP	39+
1x1 120-60ns DIP	5+
256X4 120-60ns DIP	5+
256X4 120-60ns ZIP	5+
256x32 (1MB Simm 72P)	39+
512x32 (2MB Simm 72P)	85+
1x32 Simms (4MB)	149+
2x32 Simms (8MB)	299+
4x32 Simms (16MB)	599+
8x32 Simms (32MB)	1199+
PCMCIA Ram Card 2M	119+
PCMCIA Ram Card 4M	229+
GVP TBC+ FRAM	199+

Ram Changes For Better Or Worse Please Call 1st

CPUs&FPUs (Math Co Processors)

68030-RC-50 w/MMU	149.00
68030-RC-40 w/MMU	129.00
68030-EC40 (NO MMU)	109.00
68030-RC-33 w/MMU	109.00
68030-RC-25 w/MMU	75.00
68030-EC-25 (NO MMU)	50.00
68882-RC-PGA-50 FPU	119.00
68882-RC-PGA-40 FPU	109.00
68882-RC-PGA-33 FPU	89.00
68882-RC-PGA-25 FPU	75.00
68881-RC-PGA-25 FPU	45.00
68882-FN-PLCC 40 FPU	135.00
68882-FN-PLCC 33 FPU	89.00
68882-FN-PLCC 25 FPU	75.00
68881-FN-PLCC 25 FPU	45.00
68881-FN-PLCC 16 FPU	35.00
80387-25SX (386BB) FPU	69.95
Crystal Oscillators	10.00

SUPRA

SupraRam A500 w/2MB	179
SupraTurbo 28Mhz	149

SYQUEST UNMATCHED PRICES

5.25" HH 44MB DRIVE (SQ555)	$249
5.25" HH 88MB (SQ5110C) (R&W44)	$325
3.5" LP 105MB IDE & SCSI	$449
5.25" HH 200MB (SQ5200) (R&W 44&88)	$449
3.5" LP 270MB SCSI (SQ3270S) 13MS *NEW*	$449
5.25" 44MB Cartriges	$ 65
5.25" 88MB Cartriges	$ 99
3.5" 105MB Cartriges	$ 69
5.25 200MB & 3.5" 270MB Cartriges	$125
External Versions w/Cabling Add	$ 99

FASTLANE Z3

- Add up to 256 MB of ram of contiguous memory
- Transfer up to 7MB/Sec Async & 10MB/Sec Sync on the SCSI Bus
- True Zorro III 32 bit memory board
- CDROM file system & dynamic caching software
- FAST SCSI - II DMA CONTROLLER FOR BOTH THE AMIGA 4000 & 3000!

Pure Speed is Only $475

ICD

AdIDE 40MB HD System w/2.5" Drive (500/2000)	269
AdIDE 130MB HD System w/2.5" Drive (500/2000)	399
Flicker Free Video II	249

DKB

2632 w/4Megabytes	349
MegAChip 2000/500 w/2MB Agnus	189
Multi-Start 2 Rev 6A	29
KwikStart II (A1000)	69
1202 FPU & Ram w/1MB & Clk	159
1202 FPU & Ram w/2MB & Clk	199
1202 FPU & Ram w/4MB & Clk	299
1202 FPU & Ram w/8MB & Clk	499
3128 A3000/4000 Ram board Expandable to 128MB w/4MB	395

ALFA DATA

AlfaData Crystal Trackballs	49
Multiface III (2Ser/1Par)	89
Alpha Power A500+8 IDE w/120MB HD w/0MB	299
Octogon SCSI II HD Cont. w/8MB Ram Expansion	139

AUDIO

Sunrise Industries

AD516 Digitizer (16Bit)	1189
AD1012 Digitizer (12Bit)	479

EXPANSION SYSTEMS

Baseboard 601C w/1MB	69
Dataflyer XDS 0MB	69
w/130MB Hard Drive	274
w/260MB Hard Drive	299
w/340MB Hard Drive	368
w/540MB Hard Drive	568
Baseboard 1200Clock	25
Dataflyer Ramcard w/2mb	199
500 SCSI or IDE	149
1000 SCSI or IDE	149
2000 SCSI or IDE	95
500 SCSI&IDE	179
1000 SCSI&IDE	199
2000 SCSI&IDE	125

CSA

DERRINGER 25/25/1 w/MMU, FPU & 1 MB RAM	399
DERRINGER 50/4 w/MMU, & 4 MB RAM	599
Rocket Launcher 50/50 w/MMU Makes The CBM 2630 Or GVP Combo 25 run at 50 Mhz w/MMU & FPU (68882RC50)	499

Micro R&D

2000 Bigfoot Power Supply	159
1200/500 Bigfoot Power Supply	89
Slingshot A500 (1A2000Slot)	39
Slingshot Pro A500	69

GVP

A4008-HC8+0MB	149
SIMM32/1MB/60ns	69.95
SIMM32/4MB/60ns	CALL
SIMM32/16MB/60NS	CALL
1MB SIMM GForce A3000	135
G-Lock Genlock	375
EGS Spectrum w/2MB	475
A1230-40-00-4+DPP-II	499
A1230-50-00-4+DPP-II	649
A1291 Stingray	99
68040 33Mhz A2000/4MB	1049
Gforce 040 @ 40Mhz for the A4000 w/4mb & Opt for SCSI w/2 Ram Sockets	1499
TBC+ w/oSMPTE CODE	799
A500+w/42MB HD	325
A500+w/120MB HD	399
A500+w/270MB HD	499
A500+w/340MB HD	575
68882 40Mhz FPU PLCC	139
FaaastROM Kit (For HDs)	39
Cinemorph Software	35
Phonepak VFX 2.0	275
DSS8+ Sound Sampler	89
I/O Extender	CALL
Extra I/O Port	CALL
Image F/X	249
Image F/X Upgrade	39

De Vine COMPUTER SALES

18 Wellington Drive
Newark, DE. 19702
(302) 836-6174 ORDERS ONLY
(302) 836-4145 PRODUCT Info/Tech
(302) 836-8829 Fax 24 HOURS

Please Understand Our Policies

DISCOVER / VISA / MASTER Card Accepted. Prices And Specifications Are Subject To Change Without Notice! 15% Restocking Fee On All Returns. Defective Merchandise Will Be Replaced With Same Item. Call 302.836.4145 For Approval RMA# Before Returning Merchandise Merchandise. No Returns After 10 Days From Delivery Date. Not Responsible For Incompatibility Of Products Shipping And Handling For Chips Is $5 COD Fee $6 Personal Checks Require 10 Working Days To Clear. Call For Actual Shipping Prices On All Other Items. Ram Prices Change Daily

Circle 189 on Reader Service card.

From DOS disks to phantom chip RAM—Tim will find the right "A" for your "Q."

HELP KEY

BY TIM WALSH

8MB of Chip RAM?

Q. *When my Amiga dealer was installing 4MB of RAM into my Amiga 4000/040, he noticed a jumper on the motherboard labeled 2MB and 8MB chip RAM. Is it possible to upgrade the A4000 to 8MB of chip RAM?*

Roger L. Walker
Santa Ana, California

A. Virtually everyone who's taken apart an A4000 has noticed the same markings on the motherboard. While there was once official talk of making the additional chip RAM active, unfortunately, this never happened, and the potential for adding the additional chip RAM was forgotten, resulting in little more than a conversation piece.

Why Y/C?

Q. *Why is it so costly to convert a composite video signal to a Y/C signal? What exactly is a Y/C signal? Are there any reference materials that deal with this subject?*

Thomas West
Orlando, Florida

A. Component Y/C video is a video standard found in professional- or industrial-quality components. By keeping the chroma and luma signals separated, the quality of the video can weather a generation or three of additional editing that would turn composite video signals to mud. Most newer video components, such as genlocks and timebase correctors, offer Y/C connectors.

Some confusion has arisen in recent times with products such as Y/C Plus (Y/C Plus, Inc.), because they are designed to convert the composite video signal from the Video Toaster into a component Y/C signal. However, component video doesn't exist for the purpose of converting composite video signals. Rather, component Y/C is best utilized if the signal channels originate as Y/C at the source and remain that way to their final destinations.

Sources for this type of information include *AmigaWorld's* "Video Suite" columns found in back issues, and Paulo de Andrade's current "Video In Focus" column. My favorite source for video developments, applications, and hardware is a trade publication, *TV Technology* (PO Box 1214, Falls Church, VA 22041), which covers new trends and products. Best of all, this oversized publication is free to qualified subscribers.

IDE Drive #2

Q. *I have an Amiga 4000 and I'd like to add another IDE hard drive to the system. The wide ribbon cable that connects the controller to the existing drive appears to have a second connector. I think that would make adding a second IDE hard drive to the system as easy as simply plugging it in, yes?*

Norman R. Whitney
Tioga, Pennsylvania

A. You are correct, sir—you can indeed plug a second IDE drive into the existing hard-drive controller cable, provided you can find the space. As part of the introductory Toaster 4000 dealer kit, I added a second internal, large-capacity IDE hard drive to my A4000 by daisychaining it to the existing IDE controller cable. Be prepared, however, to temporarily remove the power supply and the existing IDE drive in order to properly mount the second hard drive. There's no other way to access the mounting hardware.

If you have a second internal floppy or CD-ROM, you'll have to jettison it, or go with an external, as opposed to internal, IDE hard drive.

Copying MS-DOS Disks

Q. *How do I create a 720K MS-DOS disk using Workbench 2.04? I've tried dropping a disk image of an unformatted disk over the image of the PC-formatted disk on the Workbench, only to get an error message stating disks of different sizes cannot be copied.*

Tom Roberts
Dixmont, Maine

A. As you probably well know, a PC-Amiga disk utility needs to be in place and running in order to copy PC-formatted disks on the Amiga. AmigaDOS 2.1 and later include CrossDOS, just such a utility. MultiDOS, another PC-Amiga disk utility, is available through online sources and PD disk collections.

Regardless of whether you're using CrossDOS, MultiDOS, or any similar PC utility, the Amiga's operating system won't allow you to copy or create PC-formatted disks by dragging an unformatted disk's icon over that of a PC-formatted disk—nor will it let you do it by using the Diskcopy command. Since the Amiga's OS recognizes a standard double-density PC-formatted disk as 720K in size, and an unformatted Amiga disk as 880K, it simply generates an error message and no copying occurs.

You can, however, create PC disks to your heart's content with roughly similar commands from the command line. Just open a Shell and enter

```
FORMAT <drive> NAME <diskname>
```

If you're using CrossDOS with a disk in df0:, enter PC0: in place of the <drive> nomenclature; for MultiDOS, substitute the drive name MD0:. With a PC-formatted disk in each of your Amiga's drives, you can then perform the disk copying procedure either by using the Workbench as previously described, or by entering the following in a Shell:

```
DISKCOPY <drive> TO <drive>
```
■

*Send your questions to Help Key, c/o **AmigaWorld** Editorial, 80 Elm St., Peterborough, NH 03458.*

STOP LOOKING!

We have the lowest Amiga prices anywhere!

Better Yet, WE ACTUALLY HAVE CD-32's, 1200's, 4000/030's, LC's, 040's & Towers IN-STOCK NOW!

Computer Answers

917 - Central Avenue, Prince Albert, Saskatchewan, Canada S6V-4V2
Phone: (306) 764-2888 Fax: (306) 764-0088 BBS: (306) 764-0888

(306) 953-8960
(306) 953-8961
9:30-6:00 Mon-Sat (Mountain)

With over 5 million Amiga's already sold and 1000's more every day, 1994 *is* the year of the Amiga! Commodore has the biggest and best line-up of Amiga's ever! From the world's first 32-bit CD game console to the new 4000 Tower, the Amiga family is more impressive than ever! Price, performance & features unmatched by Apple or IBM!

CD-32	A1200	1200HD	1200/030	4000/030	4000/040LC	4000/040	4000 Tower
$299	$329	$549	$899	$1,299	$1,599	$1,799	$2,199
- 68EC020 Cpu @ 14 Mhz	- 68EC020 Cpu @ 14 Mhz	- 68EC020 Cpu @ 14 Mhz	- 68EC030 Cpu @ 40 Mhz	- 68EC030 Cpu @ 25 Mhz	- 68LC040 Cpu @ 25 Mhz	- 68040 Cpu @ 25 Mhz	- 68040 Cpu @ 25 Mhz
- AGA 32-Bit Chipset	- AGA 32-Bit Chipset	- AGA 32-Bit Chipset	- 68882 Math Chip Option	- Math Chip Optional	- Math Chip Optional	- Math Chip built-in	- Math Chip built-in
- 2 MB RAM	- 2 MB RAM	- 2 MB RAM	- 4 MB RAM	- 4 MB RAM	- 6 MB RAM	- 6 MB RAM	- 6 MB RAM
- 600 MB CD-ROM Drive	- Hard Drive Controller	- 130 MB Hard Drive	- 130 MB Hard Drive	- 130 MB Hard Drive	- 130 MB Hard Drive	- 130 MB Hard Drive	- 130 MB Hard Drive
- Double Speed CD-ROM	- 880K Floppy Drive	- 880K Floppy Drive	- 880K Floppy Drive	- 1.76 MB Floppy Drive	- 1.76 MB Floppy Drive	- 1.76 MB Floppy Drive	- 1.76 MB Floppy Drive
- 11 Button Controller	- PCMCIA Expansion Slot	- 150-pin Expansion Slot	- Clock/Calendar & Battery	- Four Zorro III Slots	- Four Zorro III Slots	- Four Zorro III Slots	- Five Zorro III Slots
- T.V./Comp/SVHS Output	- T.V./Comp/RGB Output	- Four channel digital sound	- MS-DOS file compatible	- Three IBM/ISA Slots	- Three IBM/ISA Slot	- Three IBM/ISA Slots	- Four IBM/ISA Slots
- MPEG Module Available	- Kickstart/AmigaDos 3.x	- Multi-tasking Operating	- 800X600 on 1942 Monitor	- One Video Slot	- One Video Slot	- One Video Slot	- Two Video Slots
- Computer chasis optional	- Upgradeable via Trapdoor	- 210 & 340 MB available	- 33, 40 & 50 Mhz available	- Upgradeable into 4000/040	- Lowest Cost 040 Ever!	- Full 040 with MMU & FPU	- SCSI-II & IDE Built-in

All Amiga's include the new 'AGA' chipset for stunning graphics & sound. Over 16 million colors are built-in, and display resolutions range from 320X200 to 1440X480, including 800X600 & 640X960 with hundreds of thousands of colors on screen at once. True 30 frame per second animation & real multitasking are just some of the features *still* not found on those "other" platforms! The new family of Amiga's are breaking all sales records & third party development is at it's highest level ever! Don't miss out on this offer! Order your new Amiga today!

Amiga 4000 / CD-ROM!

$1,569

- Amiga 4000 Computer
- 130 MB Hard Drive
- Built-in Double Speed CD-ROM!
- Includes SleepWalker & PinBall

- 4000/030 & CD-ROM $1569
- 4000/040LC & CD-ROM $1869
- 4000/040 & CD-ROM $2169
- 4000 Tower & CD-ROM $2469

The Ideal Multi-media system. Capable of reading ISO-9660 (IBM), Photo-CD (Kodak) & CD-Audio discs, it will also run most CDTV & CD-32 Titles. CD-ROM is the wave of the future for Amiga's!

Amiga 4000 @ 40Mhz

$3,099

- Amiga 4000 Computer
- 68040 CPU @ 40Mhz
- 8 MB RAM (exp to 146 MB!)
- 340 MB Fast SCSI-II Hard Drive
- The Fastest Amiga Every Built!

An unbelievable deal on the most powerful Amiga ever offered (but believe it!) This system has a powerful 68040 CPU at it's heart running at a raging 40 Mhz. The built-in Math chip can crunch through 3D renderings literally 400 times the speed of an Amiga 500, reducing rendering time from days to minutes. If you have always wanted to create picutes & animations like you see on TV, this is the system capable of doing it!

Toaster 4000 Starters

$3,699

- Amiga 4000 Computer
- 10 MB RAM
- 130 MB Hard Drive
- Systems with More RAM/HD Available

- 4000/030 & Toaster $3699
- 4000/040LC & Toaster $3999
- 4000/040 & Toaster $4299
- 4000 Tower & Toaster $4599

The most affordable Video Toaster systems ever! Now the power of the New-Tek Video Toaster is within reach of more users than ever with these expandable & affordable starter systems

40 Mhz Toaster 4000!

$5,699

- Amiga 4000 Computer
- 68040 CPU @ 40Mhz
- 20 MB RAM (exp. to 146 MB!)
- 540 MB Fast SCSI-II Hard Drive
- Toaster 4000 Card Version 3.1

The most powerful Video Toaster ever! Longer animations are possible with 20 MB of RAM, and the animation length can be extended by adding up to 146 MB of RAM! Lightwave renderings have never been faster, with 160% more processing power than regular 4000/040's. The ample hard drive is as fast as they come, thanks to the built-in Fast SCSI-II interface and all this still leaves room for TBC Cards!

Personal Animation System

$3,599

- Amiga 4000 Computer
- 14 MB RAM & 600 MB HD's
- Personal Animation Recorder Card

- 4000/030 $3599
- 4000/040LC $3999
- 4000/040 $4299
- 4000 Tower $4599

These systems are capable of producing perfectly smooth, 60fps, broadcast quality animations. Videos up to 5 minutes long can be played directly from the 'PAR' Card as full screen, hi-resolution, 16 million color movies at 60 fps everytime!

Painting, Animation, Music & Video Software

Anim Workshop Version 2.0 (A MUST!)	$ 99
Deluxe Paint 4.5 (AGA Version!)	*$109*
Disney Animation Studio	$ 29
Brilliance Paint & Animation (24 Bit on AGA!)	*$ 79*
Caligari 24 (The fastest rendering program ever)	$119
Real 3D version 2.0 (Collisions, Gravity & Wind!)	$379
Imagine 3.0 (Brand New Version! Now In Stock!)	*$379*
LightRave 3.1 (Lightwave Emulator)	$339
Sparks (Particle Animation for Lightwave)	$ 99
T-Rexx Professional Version 2.1 (for Toaster)	$119
Swipes (for Video Toaster)	$ 89
Art Department Professional (AdPro Version 2.5)	$139
Montage (The Ultimate Character Generator)	$225
Pegger (on-the-fly IFF picture compression!)	$ 69
Bars & Pipes Professional Version 2.0	$215

CD-32 & Encyclopedia!

$429

- Grolliers Encyclopedia on CD-ROM!
- Timetable of Business, Politics & Media on CD!
- World Vista Atlas on CD-ROM!

Deluxe Music Version 2.0 (Much Improved!)	$ 79
Super Jam Version 1.1 (Very Easy to Use!)	$ 79
WaveMaker for Lightwave/LightRave	$129
WaveLink (Double Lightwave/LightRave Speed!)	$ 99
Distant Suns Version 5.0 (AGA w/256 Colors)	$ 59
Image FX (Painting, Image processing, morphing)	*$169!*

Productivity, Business, Utilities & Programming

QuarterBack Version 6.0	$ 59
QuarterBack Tools Deluxe	$ 69
AmiBack & AmiBack Tools (Two Programs!)	$ 55
SAS C & C++ Version 6.5 (Development System)	$239
DevPac Version 3 (Assembler)	$ 69
EDGE Professional Text Editor	$ 59
Home Front Version 2.5	$ 29

Final Copy Word Processor (with spell checker)	*$ 39*
Pro Calc (Probably the best Amiga spreadsheet)	$109
ProPage 4.1 (The standard in Amiga Publishing)	$ 75
ProDraw 3.0 (Full featured structured Drawing)	$ 75

We've got it at the lowest price!
Final Copy only $39
(Regular Price $69, Supplies limited to 13)

Video, Audio, Graphics & DTV Peripherals

RocGen (Low cost, high quality external genlock)	*$199*
GVP G-Lock (Superinpose Graphics on Video)	$375
SuperGen SX (Broadcast quality Genlock)	$689
TBC III from DPS (Low cost leader in TBC's)	$669
TBC IV from DPS (Updated version)	$789
GVP TBC Plus (TimeBase Corrector from GVP)	$675
Kitchen Sync (Two complete TBC's on one card!)	$1189
Retina 24 Bit Card 2MB (First & still great!)	$299
Picasso II (24 Bit Retargetable Graphics Card)	$429
GVP Spectrum (24 bit cards with pass-thru)	$459
Merlin 24 Bit Video board with 2MB VRAM	$569
Toccatta16 (Best Value on 16-bit sound!)	$469

CD-32 MPEG Card

$299

with any *two* movies, FREE!

Apocalypse Now, Billy Ray Cyrus, Black Rain, Bon Jovi, Eric Clapton, Fatal Attraction, Hunt for Red October, Indecent Proposal, Naked Gun 2½, Patriot Games, Playboy Massage, Sliver, Star Trek 6, The Firm, Top Gun

VLab Video Digitizer with 30fps recording	$369
VLab Y/C (VLab with Super VHS connections)	$469
AD1012 Board & Studio 16 (Four Track)	$449
AD516 Board & Studio 16 Software Version 3.0	$1149
Personal Animation Recorder by DPS	$1459
Video Toaster (with computer purchase only)	*$1849*
Personal Component Adaptor (YC++ for Toaster)	$259

Accelerators & Memory Boards

Warp Engine 4028 (28Mhz & SCSI-II for 4000/040)	$719
Warp Engine 4033 (33Mhz & SCSI-II with CPU)	$1189
Warp Engine 4040 (40Mhz & SCSI-II with CPU)	$1389
GVP 1230, 68030 @ 50Mhz (0MB & no FPU)	$499
Amiga 1230, 68030 @ 40Mhz (0MB & no FPU)	$325
Amiga 1230, 68030 @ 33Mhz (0MB & no FPU)	$375
CSA 12 Gauge (33 Mhz) with SCSI (0MB/0FPU)	$429
CSA 12 Guage (50 Mhz) with SCSI (0MB/0FPU)	$559
MBX 1200z Style RAM Board with 1MB RAM	$139
4MB SIMM for Amiga 4000's, MBX1200z, etc.	$157
50 Mhz 68882 FPU for 4000/030 or 1230 Boards	$ 98

We've got it at the lowest price !
A570 CD-ROM only $89
(Regular Price $299, Supplies limited to 17)

Printers

Star NX-1001 (9 pin Black & White with NLQ)	*$119*
Star NX-1040 (9 pin Color with NLQ)	$139
Star NX-2430 (24 pin Black with Letter Quality)	$179
Star NX-2450 (24 pin Color, LQ & SheetFeeder!)	$219
Star NX-2480 (24 pin Color with LQ & 330 cps!)	$239
Star SJ-144 (Color Wax Ink Jet & Laser Quality!)	$449
Primera (Best color output of ANY printer)	$649
Hewlett Packard DeskJet 520 (600 dpi!)	$269
Hewlett Packard DeskJet 500c (300 dpi Color!)	$369
Hewlett Packard DeskJet 560c (600 dpi & Color!)	$549
Hewlett Packard LaserJet 4 (600X600dpi, 2MB)	*$659*

Modems & Scanners

Supra 2400 Modem	$ 49
Supra 14,400 Modem/Fax with Caller-ID!!!	*$139*
GP FAX Software for Supra Modems	$ 49
Best Data Products 14,400 Baud Fax/Modem	$149
AlfaData 800 dpi Hand Scanner (Black & white)	*$169*
AlfaData 400 dpi Hand Scanner (262,000 Colors)	$289
Epson ES300C 24-bit Color Scanner	$469

Monitors

	With Amiga / Alone
Commodore 1950 Multiscan	$299 / $399
Commodore 1960 MultiScan	$339 / $439
Commodore 1942S MultiScan w/Stereo	$349 / $449

We've got it at the lowest price!
Supra 14400 Modem $145
(Regular Price $229, Supplies limited to 18)

NEW 1962 MultiScan Monitor	$429 / $469
NEW 1440 MultiScan Monitor	$429 / $469
NEW CA1428 Bi-Scan (640X400 & 800X600)	*$269 / $299*
IDEK 17" Multi-Scan (NTSC & VGA)	*$919 / $959*
IDEK 20" Multi-Scan (CLEARANCE!!)	$999 / $999

(we expect to have monitors back in stock by the time you read this)

Drives, Storage & Cards

CD-ROM & Controller for 2000/3000/4000	$219
Double Speed CD-ROM & Controller	*$249*
IOMEGA 150i MB Bernouli Box & cartridge	$469
Syquest 105MB Kit for 4000 (or 2000/3000 with CD)	*$359*
DataFlyer XDS External Case/Controller for 1200	$ 65

We've got it at the lowest price!
CD-ROM & Controller $219
(Regular Price $449, Supplies limited to 50)

DataFlyer 4000SX SCSI Controller for 2/3/4000	$ 79
FastLane Z3 FAST SCSI-II Controller for 3/4000	$499
DKB 4091 FAST SCSI-II Controller	$289
AlfaData External 880K External Floppy Drive	$ 69
PowerComputing 1.76MB External Floppy	*$129*
MultiFace III Card with two Serial & one Parallel	$ 79
Emplant Color Macintosh Emulator (IBM Soon!)	$249
AMAX Color Macintosh Emulator	$359
GVP DSS8+ Digital Sound Studio	$ 79

We have *the best prices* on:

Amiga, ASDG, AlfaData, Axiom Software, Best Data Products, CSA, Digital Creations, Digital Processing Systems, DKB, Electronic Arts, Expansion Systems, Expert Systems, Fargo, Epson, Grolliers, GVP, Gold Disk, Heifner, Hewlett Packard, IDEK, Interworks, Iomega, MacroSystems, Maxtor, Microbotics, Micropolis, Migraph, Moonlighter, NEC, NewTek, Primera, Prime Image, Psygnosis, Quantum, ReadySoft, Rombo, Sanyo, Seagate, SoftLogic, Softwood, Star, SunRize, Supra, Syquest, US Robotics, Utilities Unlimited, Warm & Fuzzy Logic, & MANY MORE!

CD-32 Titles $18 & up!

US Football, Alfred Chicken, Arabian Knights, BattleChess, Bart vs. The World, Body Blows, Beastlord, Beavers, Brutal Sports Football, Bubba & Styx, Bubble & Squeak, Caesar Deluxe, Cohort II, Captain Dynamo, Castles II, Chaos Engine, Chuck Rock, CJ's Elephant Antics, Dennis, Disposable Hero, D Generation, Dangerous Streets, Deep Core, Defender of the Crown 2, Dennis the Menace, Diggers, Elite 2, Champion Football, Fire & Ice, FireForce, Fly Harder, Fury of the Furries, Global Effect, Golden Collection, Grolliers Encyclopedia, Guiness Records II, Gulp, Gunship 2000, Here with the Clues, Hired Guns, Humans 1 & 2, Insight Technology, International Karate, James Pond II, James Pond III, John Barnes Soccer, Krusty's Fun House, Labrynth of Time, Legacy of Sorasil, Liberation, Lionheart, Liverpool Football, Lost Vikings, Lotus Trilogy, Lunar-C, Magicland Dizzy, Manchester Soccer, Mean Arenas, Microcosm, Morph, Myth, Naughty Ones, Nick Faldo Golf, Nigel Mansell Racing, Ninja III, No Second Prize, Oscar, Overkill, Pinball, Pirates Gold, Rise of the Robots, Sabre, Samurai, Sensible Soccer, Simon the Sorcerer, Sleepwalker, Soccer Kid, SpeedBall 2, Summer Olympix, Super Putty, Super Methane Bros, TFX, Total Carnage, Traps & Treasures, Trivial Pursuit, Trolls, Turican 3, Uridium 2, Whales Voyage, Zool

We are your CD-32 store! We were the first dealer in North America to ship the CD-32 & we have the largest selection of titles! Most titles are $18-$29! Some of these titles were not released as of add deadline, so pleae call & check!

Shipping & Handling

Software, Peripherals & Accessories

0-20lbs	*.95/lb*	*2-3 Days*
Over 20lbs	*add .50/lb*	*2-3 Days*

Computers & Monitors

CD-32 or A1200	*$19*	*5-9 Days*
A4000 or 4000T	*$38*	*5-9 Days*
Monitor	*$28*	*5-9 Days*

If you need it faster, Next Day & Second Day Air is also available.

These are the average rates & delivery times in business days for ground service within Canada & the USA and include all regular shipping, handling, duty, brokerage, customs clearance and door to door delivery. Some orders may require special handling, installation etc., therefore this is only a guideline. Delivery rates & times are not guaranteed. UPS/FedEX/Mail will not accept claims for damage/loss without insurance. Insurance is 4% of insurred amount.

** Too many people could still read it, so we made the fine print even smaller.* The US$ prices shown are based on the US$-Canadian$ exchange rate as of add creation, and are shown for comparison purposes. Since we are a Canadian company, transactions are in Canadian funds. If you are not Canadian, your bank will automatically convert to foreign funds when you place an order and we authorise your card, therefore, actual prices may vary slightly (usually less than ½%) ***If this is unclear, please ask for details.*** Saskatchewan residents add 9% Provincial Sales Tax & Canadian residents add 7% G.S.T. ***You do not get charged any other taxes, tariffs, duties or fees.*** This add reflects products & pricing available to us as of ***April 29/94.*** By the time you read this add in the ***July 94 Issue***, some things probably will have changed, for better or for worse! ***If you see anything advertised at a lower price by anyone else, please give us a call & we'll beat it!*** Special purchase items are brought in on pre-paid orders and shipped to us in lot quantities, so delivery times are not guaranteed. There will be a 15% restocking fee on orders refused/cancelled/returned (except of course for defectives returned for repair or exchange) All equipment is NTSC/120 Volt / 60 Hz so it will work fine anywhere in Canada/USA/Mexico. While we do our best to maintain good inventories of the products advertised, some items are very popular and demand exceeds supply, so call order early! Items temporarily out of stock will be special ordered and shipped when available. ***If any of this is unclear, please ask for details before ordering.*** Sorry, but we can't be responsible for damage, delays or loss during shipping, so please insure your order.

Are you really reading this just to see what I'm going to say this month? Amiga Rules!

Circle 166 on Reader Service card.

InfoMarket

Scientific Amigan

From Aerospace Engineering to Zoology, ***Scientific Amigan*** provides articles and software to enhance research, analysis, and design with the Amiga. Two disks with subscription. Sample issue $2.

Annual Subscription: $39 domestic, add $10 for foreign delivery

Dept. AW, POB 60685, Savannah, GA 31420

Circle 174 On Reader Service Card.

HIGH RESOLUTION

35mm Slides/Negatives

AMIGA Files to 35mm Slides/Negs or 4x5's

- 48 Hour Turn Around for Slides
- Photo Prints up to 8 x 10 from Negatives
- 14.4 Modem Transfers & BBS Support
- IFF, IFF24, Ham, Ham8, Framestores, and DCTV

CALL (715)856-5627 MC/VISA accepted

or write to: GRAPHIC IMPRESSIONS PO Box 254 Wausaukee, WI 54177

ULTRA HIGH RESOLUTION

4x5 COLOR TRANSPARENCIES and 35mm COLOR SLIDES

from COLOR POSTSCRIPT • 24-BIT IFF • HAM • Standard IFF

• Over 4000-line Resolution • NO Scanlines • NO Curvature Distortion • Brilliant Color

HAMMOND PHOTOGRAPHIC SERVICES
(602) 949-6066

Call or Write for order form, price list & sample:
4301 N. 75th Street, Suite 101-B
Scottsdale, Arizona 85251

A&M COMPUTER REPAIR - AUTHORIZED SERVICE CENTER

6 years of quality service

We service the ENTIRE Commodore/Amiga product line. Experienced & authorized technicians. Replacement and repair parts available at low prices. We service nationwide.

*call for details — **REPAIR COSTS**

A500 - $56.95*	C64 - $35	C128 - $60.00
A2000 - $79.95*	1541 - $45	C128D - $70.00
A3000 - $95.00*	1571 - $55	Call for others
A4000 - Call	SX64 - $70	

10% off with mention of this ad

Dealers call for Special Quantity Discount
FREE ESTIMATES
24 HOUR TURNAROUND
(800)344-4102

A&M COMPUTER REPAIR
24 Colonel Conklin Drive
Stony Point, NY 10980
(914)947-3522 FAX (914)947-2728

Circle 190 On Reader Service Card.

Amiga 4000 Super Sale

J&C Repair RD #2 Box 9 Rockton Pa. 15856
Phone 800 967 1073 FAX (814) 583-5995

System	CPU	Memory	Harddrive	Price
Amiga 4000	040	6MB	420 MB	$2199.00
Amiga 4000	040 LC	6MB	420 MB	$1899.00
Amiga 4000	030	4MB	120 MB	$1499.00
With Toaster 4000 3.1				
Amiga 4000	030	10MB	120 MB	$3995.00
Amiga 4000	040 LC	10MB	420 MB	$4252.00
Amiga 4000	040 LC	18MB	420 MB	$4596.00
Amiga 4000	040	18MB	420 MB	$4995.00
Amiga 4000	040	18MB	840 MB	$5495.00

This Month's Specials
Electrohome Monitor $499.00
Kitchen Sync TBC $1199.00
A4000 Tower Call

Repair Services
Amiga Repairs all models
$35.00 + Parts
A500 Internal Drive $45.00
MotherBoard Swapouts
A500. $79.00 • A2000 $224.00
A3000-16 $245.00
• A3000-25 $298.00

Circle 80 On Reader Service Card.

LIQUIDATIONS & BARGAINS

If you think you can't afford quality commercial software ... think again! Although we carry the top 100 software hits and a full line of accessories for your AMIGA, we specialize in closeouts and liquidations. Let us do the bargain hunting for you! Find out why thousands of computer users choose us as their one stop supplier.
We publish one of the best catalogs in the industry. Call or write for your free copy!

SOFTWARE SUPPORT

Software Support Int.
2700 N.E. Andresen Rd.
Suite #A-10
Vancouver Wa 98661
(206) 695-1393
AMIGA - C64/128 - IBM

CALL TOLL FREE TODAY!
1-800-356-1179
Major Credit Cards Accepted.

Circle 192 On Reader Service Card.

USED AMIGA HARDWARE!

COPPERHEAD: The #1 dealer in quality pre-owned AMIGA hardware!
BUY: The Amiga or add-ons you want w/o paying "new" prices.
SELL: Your used Amiga equipment to us. BEST PRICES PAID!
TRADE: In your system or accessories; Get the hardware you want!
*30 day warranty on all equipment * Quick cash for your hardware *

COPPERHEAD TECHNOLOGIES, INC, 106 Jay St., Schenectady, NY 12305
Voice/Fax: (518) 346-3894 BBS: (518) 346-7532

Circle 77 On Reader Service Card.

KASARA MICRO SYSTEMS 1-800-248-2983 • 803-681-5515

Now the only source you will need for your Commodore product requirements. We have been your AUTHORIZED source for more than a DECADE of quality service.

COMPETITIVE prices on NEW or USED CPUs & accessories, upgrades, replacement parts & assemblies

SAVE MONEY with our EXCHANGE programs, repair/maintenance services and stock-to-one-week delivery

REDUCE COSTS with our MONTHLY SPECIALS, 90 day warranty on parts/repairs & quantity discounts

Weekday Hours 9:00 AM–6:00 PM EST

AMIGA AND COMMODORE SUPPORT SERVICES *AMIGA*

Now utilize the same repair facilities used by dealers and other Commodore service centers. Take advantage of direct low pricing, fast turnaround, extended warranties, service contracts, low-cost system upgrades (such as 1 MB Agnus), Toaster problems and most important—PROFESSIONAL SERVICE.

For every piece of equipment repaired and returned to our customers, we will include your choice of the following **FREE**:
- A Commodore or Amiga diagnostic diskette ($10.00 value).
- A Commodore Diagnostician or Amiga Troubleshooter ($10.00 value).

SPECIAL LIMITED TIME OFFER
Between now and July 15th, every customer who sends us their Amiga for repair has the option to purchase "Where in the World is Carmen Sandiego" software for the low price of $10.95, while supplies last.

USING OUR SERVICE IS AS EASY AS 1-2-3

1. Call our toll-free number 1-800-426-8693 and receive a Return Authorization Number. This is your tracking number.
2. Pack your unit(s) securely. Write the Return Number on the outside of the box. Include Credit Card Number, Check or Money Order.
3. Send via UPS or other carrier.

FOR FAST REPAIR CALL 1-800-426-8693
HOURS: 9-6 E.T. MON.-FRI.

COST OF SERVICES*

AMIGA		COMMODORE	
FLAT RATE LABOR		FLAT RATE LABOR	
A500	$55.00	C64	$25.00
A2000	$85.00	C128	$45.00
A3000	CALL	1541	$30.00
A4000	CALL	1571	$35.00
* PLUS UPS SHIPPING		CDTV	$60.00
CALL FOR OTHER ITEMS WE SERVICE			

GLOBAL UPGRADES. INC. 3 CHESTNUT STREET, SUFFERN, N.Y .10901
914-357-2424 • FAX: 914-357-6243

Circle 74 On Reader Service Card.

Better Concepts, Inc. Blows Away The Competition

CD32 Titles

Title	Price	Title	Price	Title	Price	Title	Price
DGeneration	30.00	Battle Toads	34.00	Pinkie	34.00	Video Creator	$Call
Overkill/Lunar	34.00	Uridium II	34.00	World Cup Sccr	34.00	CD32 Football	32.95
Sensible Soccer	32.00	Sexual Fantasies	59.95	Extractors	34.00	Insight:Tech	39.95
Liberation	32.00	Robocod	34.00	Lock N Load	16.95	NewGroliersEnc	130.95
Seek & Destroy	22.00	Global Effect	35.00	Thats Games I	27.95	Def Crown II	36.95
Fury of Furries	34.00	Morph	32.00	Thats Games II	27.95	Dngrs Streets	34.95
Chaos Engine	32.00	Brutal Sprt Ftbll	35.00	Games&Goodies	28.95		
Fire & Ice	31.00	James Pond III	36.00	Strip Poker	29.95	**Call For More!**	

Amiga CDs

Title	Price	Title	Price
17BitCllctn(2CD)	31.95	CD PD I	21.95
17BitCont.	17.95	CD PD II	21.95
Aminet Mar94	14.95	CD PD III	21.95
Sexual Fantasies	59.95	CD PD IIII	22.95
Thats Games I	28.95	Demo CD I	21.95
Thats Games II	28.95	Demo CD II	21.95
GamesNGoodies	29.95	FreshFish 4/94	19.95
Clipart & Fonts	39.95	FrznFsh 1-1000	19.95
Strip Poker	29.95	Lock-N-Load	16.95

CDTV Titles

Town With No Name-Interactive western cartoon! Also works on CD32! 12.95

Psycho Killer-An interactive psycho murder mystery! Also works on CD32! 12.95

Eyes Of The Eagle-Interactive futuristic RP adventure! 12.95

Women In Motion-B&W animations of 19th century nude women. Great for loading into paint / video programs 9.95

Animals In Motion-B&W animations of all sorts of animals. 9.95

HoundOfBaskervilles-Interactive Sherlock Holmes mystery 12.95

Commercial Software

Title	Price	Title	Price
Amazing Spiderman	7.95	Chaos In Andromeda	7.95
Covert Action	9.95	Gold Runner II	7.95
F-15 II	9.95	Golf by Online	7.95
Flames Of Freedom	7.95	HiSoft Basic Pro	9.95
Greens	9.95	Keys To Maramon	9.95
Knights of the Sky	9.95	OperationCleanStreet	7.95
Millentum	9.95	Prime Time	7.95
Silent Service II	9.95	ProText	7.95
Twilight Ransome	9.95	PersonalFinanceMgr	9.95
Bermuda Project	7.95	Rotor	7.95
Breach II	7.95	RulesOfEngagement	9.95
Campaign I	12.95	Tetra Quest	7.95
Sleeping Gods Lie	9.95	The Colony	7.95
War In The Gulf	10.95	Zeotrope	9.95

All Titles Are Brand New! Dont miss out! Dealer Inquiries Welcome!

Combat Classics I
(F-15 II, Team Yankee & 688 Attack Sub)
22.95

Combat Classics II
(F-19 Stealth, PacificIslands & Silent Service II)
24.95

Future Classics Collection
(Tank Battle, Diet Riot, Lost Maze, Disc Man & Blocker Launch)
9.95

IXXX Adult Pictures!
Pics Pkgs #1 - #10
10 packs each containing 10 disks filled with full color xxx pictures! Must be atleast 21!
Single Pack $24.95 or 5 packs for 22.95 each or All 10 packs for only 149.95!

Public Domain Software

AGA Utility Package
10 disks filled w/latest utilities for your AGA machine! 17.95

AGA Showoff Package
10 disks filled with eurodemos, animations & more that really showoff your AGA Amiga! 17.95

DOLLAR DISKS

WWF Wrestling-Cute game of pro wrestling.
ABackUp 4.06-Newest HD backup utility.
BattleSheep-Small battleship type game.
HamLabPlusDemo 2.08a-Latest version!
MainActor 1.5-Great animation utility!
Sequential Eurodemo-Great new demo!
Nine Fingers-Another awesome eurodemo!
Techno I-Disk full of techno music!
Music Maniac-Several great tunes to play!
DirWork 1.62-The best Dir Opus clone!
WHOMS-Great Star Trek disk magazine!

S&H Add $5 min. We also carry the largest PD library! See our previous ads or call/write for free catalog or send $3 for catalog, disk catalog & sample disk! Or shop the competitions ad & we'll sell you the same for 50% off! Call for anything!

Call Now To Order! 1-800-25Amiga

MasterCard VISA

Better Concepts, Inc.
10 Mandon Terrace
New City, NY 10956

MasterCard VISA

1-914-639-5095 Info
1-914-634-7097 Fax

Circle 151 On Reader Service Card.

VISIONSOFT

PO Box 22517 • Carmel, CA 93922

MEMORY	UNIT	2MB	4MB	8MB
GVP 32/4Mb SIMM	205.00	—	205	410
GVP 32/16Mb SIMM	1099.00	—	—	—
1x8- 70, 80 SIMM	45.00	90	180	360
4x8- 70, 80 SIMM	139.00	—	139	278
2x32- 60 SIMM	309.00	—	—	309
4x32 - 70 SIMM	659.00	—	..—	.—
8x32 - 70 SIMM	1199.00	—	—	—
1x32 - 70 SIMM	159.00	—	159	318
1x32 - 60 SIMM	169.00	—	169	338
256x4 -70 PG ZIP	6.50	104	208	400
256x4 -70 PG DIP	6.00	96	192	368
1x4 - 80 PG ZIP	22.00	88	176	352
1x4 - 80 SC ZIP	24.00	—	192	380

A1200 Clock 35
A1200 IDE Cable 12
A1200 Y Cable 20
Cables & Adapters ....Call
M68882/25 fpu....59
M68882/33 fpu 129
M688882/40 pga....129
2.04 Kickstart Rom....29
2.05 Kickstart Rom....35
AmigaCD 32 179

1.76 Mb Floppy Dr....99
External Floppy Disk Dr....79
2.5" IDE 45Mb Hard Dr ..129
2.5" IDE 260Mb Hard Dr 399
3.5" IDE 560Mb Hard Dr...489
Pyramid Midi Interface ..49
Analog Joystick....22
Amiga Optical Mouse....39
A2000 Keyboard....45
CD 32 Game Titles....Call

ORDERS only: 800-735-2633
INFO & TECH: 408-899-2040
Fax: 408-899-8760 BBS: 408-625-6580

VISA MasterCard COD

Prices and Availabiltiy of Products Subject to Change Without Notice

Circle 86 On Reader Service Card.

Point & click adventure game creator for the Amiga!

DREAMWEAVER™

"The Great Adventure Builder"

Rated "A-" April '94 in AmigaWorld Magazine!

Sound effects, graphics, special fx, debugging tools

Runs on any Amiga with 1.5Mb of RAM

Includes editor, player, manual and 2 adventures

$29.95 plus $3.50 s&h (check or money order)

AmyGames, PO Box 485, Zionsville, IN 46077

317-873-9817

Circle 46 On Reader Service Card.

NORTHWEST PUBLIC DOMAIN Accept NO Substitutes!

CD ROM GoldMine!

17 Bit Collection - $29.95
17 Bit Continuation - $19.95
DEMOCD 1&2 - $25.95 Ea.
CDPD 2&3 - $25.95 Ea.
AMINET CD '94 - $15.95
Space & Astronomy - $19.95
FrozenFish 1-1000 Compressed-$19.95
GoldFish 1-1000 Uncompressed-$19.95
EuroScene 1 (Demos, Mods, Anims) - $Call

CD32 Titles: LIBERATION - $32.95
Labyrinth of Time(Huge Adventure!)-$31.95
Arabian Nights(Platform Fun) - $21.95
LOTUS TRILOGY RACING - $32.95
CHAOS ENGINE (Outstanding!) - $36.95
GUNSHIP 2000(Helicopter Sim)-$39.95
BRUTAL SPORTS FOOTBALL - $31.95
FURY of the FURRIES - $31.95
VIDEO CREATOR(MTV on a Disc!)-$Call
FRONTIER: ELITE 2 (Huge!) - $36.95

WE NOW CARRY THE BEST OF THE AMIGA 'EURO'-MAGAZINES! AMIGA FORMAT - CU AMIGA - AMIGA SHOPPER - AMIGA Computing - AMIGA USER INTERNATIONAL - CD32 GAMER - ALL ARE $8.00ea. + S&H

LOCK -N- LOAD
The ULTIMATE AMIGA PD / Shareware Games Compilation for CD32, CDTV, and any external CD-Rom, still just **$22.49**(+$2.00 S&H)(Call about User Group discounts)

ATTENTION GAME PROGRAMMERS!: Work has already begun on Lock -N- Load 2. If you want your original game on the CD please submit them now. Remember: If we use your Submitted game on the CD, you will receive a FREE copy!!

LICENSEWARE TITLES:

MAD FIGHTERS A1200 - Outstanding 'StreetFighter 2' clone with Combination moves and everything! **3 Disks(PAL) $9.00**

CLU 003 - TYPING TUTOR - The BEST program of this type! **1 Disk $5.50**

CLU 007 - SuperSound v4.7 - Incredible Sound Sampling and editing Software. For use with an hardware Sampler, Like DSS8 or Perfect Sound. **1 Disk (PAL) $5.50**

CLU 015 - EPOCH PRO 1.61- A very powerful desktop diary/calendar with an address book and Database. **1 Disk $5.50**

CLE 001 - Dinosaurs 1 - Excellent Hypermedia guidebook to the world of the mighty 'Thunder Lizards'. **2 Disks $6.50**

CLE 055 - Basically BASIC - A Hypermedia Tutorial to the BASIC Language, aimed at beginners, whether you use AMOS, HiSoft, or even AMIGABasic, this will help! **1 Disk $5.50**

CLG 041 - F1 Racer - Outstanding 3D racing game along the lines of Indy 500 accelerator recommended. **1Disk (PAL)$5.50**

CLG 035 - OG! - You are the Caveman OG in this charming platform game. **1Disk(PAL)$5.50**

CLG 028 - Time Rift - An absolutely HUGE Platform game with a zillion screens, great graphics, and wonderful gameplay! **(PAL)$5.50**

Interested in a Complete listing of the CLR Licenseware Disks? Call us at (206)351-9502 and request it.

ASSASSINS GAMES DISKS

June Special! ANY 10 for $12.00(S&H inc.)

ASI 168 - MINE RUNNER, DRELBS, PARCHEESE, DYNAMITE WARRIORS.
ASI 169 - PEE BEE, TURBO HOCKEY-BRAIN DAMAGE.
ASI 170 - BETTER DEAD THAN ALIEN, COGNITION.
ASI 171 - DELUXE GALAGA- , XMAS TIME, AMOSTEROIDS.
ASI 172 - Scorched Tanks 1.15, DOZER DEMO, ISOLATION.
ASI 173 - ORK ATTACK, TASK FORCE, POP QUIZ.
ASI 174 - METOGRASP, STATIX, KASELAGD.
ASI 175 - MATRIX BLASTER, ULTIMATE QUIZ, DOTZ.
ASI 176 - SPORTS CHALLENGE SPRING EDITION, INCINERATOR DEMO, SPORTS CHALLENGE SUMMER EDITION
ASI 177 - GORF, CHECKERS CONQUEST, MUCUS
ASI 178 - 40 THIEVES, COOKIE, OXO 3D.

For a COMPLETE LISTING of the ASSASSINS GAMES DISKS CALL and request one at (206)351-9502!

AMOS PD DISKS!

We now have the complete library of AMOS PD Disks 1-600, A complete catalog disk is available for only $2.00! Some Highlights:

APD 036 - AMOS UPDATER - Update your AMOS Classic to version 1.36.

APD 373 - AMOS COMPILER UPDATER - Update your AMOS Classic Compiler to version 1.36.

APD 466 - AMOS Pro UPDATER - Update AMOS Pro to v. 1.36.

AM/FM Musicians Magazine is now up to Magazine and Samples Disk #18!Only $5.00

17 Bit Software! Now up to Disk #3091

Call for Updated Software Listing!

Fred Fish Collection up to 1,000!

As you can see, We are the most complete and up to date library around!

AGA DEMO PACK SPECIAL!! Contains the best of the new breed AGA DEMO's from Europe! Includes: Big Time Sensuality, RayWorld, Complex Origin, Beyond Belief, Full Moon, and Abstrax Pig! 10 Disks for only **$15.00 + $2.00 S&H**

NPD PRICING!!

AMOS PD, NPD, ASI, and 17Bit are: 1-24 Disks @ 2.00 ea.,26-49 Disks @ $1.50 ea. 50+ Disks @ $1.00 ea.

The Fred Fish Collection: 1-24 Disks @ $1.50ea. 25-49 Disks @ $1.25 ea. 50+ Disks @ $1.00ea.

AM/FM Musician's Magazine: Magazine Disks: $5.00ea. Samples Disks: $5.00ea. Mag. & Sample Disks together are $8.00

CLR Licenseware Pricing: 1Disk Title $5.50- 2Disk Title $6.50 - 3Disk Title $7.50

S&H:1-10Disks-$2.00,11-50Disks-$4.00,51+-$6.50

NorthWest PD - P.O. Box 1617 - Auburn, WA 98071-1617 - (206)351-9502 We Accept Cash, Checks, Money Orders, VISA/MC, COD add $4.00

Circle 170 On Reader Service Card.

Manufacturers'/Distributors' Addresses

Advanced Systems & Software
1329 Skiles St.
Dallas, TX 75204
214/821-7776

Alfa Data
PO Box 6990
Champaign, IL 61821
217/356-1962

Amiga Crossings
345 E. 93rd St. #26E
New York, NY 10128
212/369-8131

Amprodex
4650 Langford Rd.
North Collins, NY 14111
716/337-3238

ASDG
925 Stewart St.
Madison, WI 53713
608/273-6585

Axiom Software
1668 East Cliff Rd.
Burnsville, MN 55337
612/894-0596

Black Belt Systems
398 Johnson Rd.
Glasgow, MT 59230
406/367-5513

Blevins Enterprises
121 Sweet Ave.
Moscow, ID 83843
208/882-0148

Blue Ribbon Soundworks, The
Chantilly Drive,
Suite 200
Atlanta, GA 30324
404/315-0212

Buzz
Distributed by Krisalis Software

Centaur Development
PO Box 3959
Torrance, CA 90503
310/787-4530

Cloanto
Distributed by Centaur Development

Commodore
1200 Wilson Drive
West Chester, PA 19380
215/431-9100

DevWare
12520 Kirkham Court,
Suite 1
Poway, CA 92064
619/679-2825

Diemer Development
12814 Landale St.
Studio City, CA 91604
818/762-0804

Digital Integration
Watchmoor Centre
Watchmoor Rd.
Camberley
Surrey GU15 3AJ
England
27-667-8806

Digital Micronics
2075 Corte del Nogal
Carlsbad, CA 92009
619/931-8554

Electronic Arts
1450 Fashion Island Blvd.
San Mateo, CA 94404
800/245-4525
415/572-2787

Expansion Systems
11862 Osgood Rd.
Fremont, CA 94539
510/656-2890

Expert Services
7559 Mall Rd.
Florence, KY 41042
606/371-9690

Flair Software
Meadowfield House
Ponteland
Newcastle NE20 9SD
England
66-186-0260

GMR Productions
3835 Richmond Ave., Suite 138
Staten Island, NY 10312
718/967-1509

Great Valley Products
657 Clark Ave.
King of Prussia, PA 19406
215/337-8770

Gremlin Graphics Software
Carver House
2-4 Carver St.
Sheffield S1 4FS
England
74-275-3423

William S. Hawes
PO Box 308
Maynard, MA 01754
617/568-8695

InnoVision Technology
1933 Davis St.
San Leandro, CA 94577
415/638-8432

International Computer Entertainment (ICE)
Bridge House
Merrywalks
Stroud
Glostershire GL5 1QA
England
45-375-6993

Jaeger Software
7800 White Cliff Terrace
Rockville, MD 20855
301/948-6862

Krisalis Software
Teque House
Masons Yard
Downs Row
Moorgate
Rotherham S60 2HD
England
70-937-2290

MacroSystemUS
Distributed by Noahji

Media4 Productions
2800 University Ave.,
Suite H1B-101
West Des Moines, IA
515/225-7409

MegageM
1903 Adria
Santa Maria, CA 93454
805/349-1104

Micro R&D
PO Box 130
Loup City, NE 68853
308/745-1243

Micro-Pace
109 South Duncan Rd.
Champaign, IL 61821
217/356-1884
800/362-9653

MicroProse
1 Hampton Rd.
Industrial Estate
Tetbury
Glostershire GL8 8LD
England
66-650-4326

Millenium
Quern House
Mill Court
Great Shelford
Cambridge CB2 5LD
England
22-384-4894

Natural Graphics
4603 Slate Ct.
Rocklin, CA 95677
916/624-1436

NewTek
1200 Executive Drive
Topeka, KS 66615
913/354-1146
800/843-8934

Noahji
3591 Nyland
Lafayette, CO 80026
303/499-1975

Obvious Implementations
PO Box 4487
Cary, NC 27519
800/761-2042

Oregon Research
16200 SW Pacific Hwy.
Suite 162
Tigard, OR 97224
503/620-4919

Playfield!
PO Box 450884
Sunrise, FL 33345
305/846-7969

Renegade
C1 Metropolitan Wharf
Wapping Wall
London E1 9SS
England
71-481-9214

Right Answers Group
PO Box 3699
Torrance, CA 90510
213/325-1311

Scala Inc.
12110 Sunset Hills Rd.,
Suite 100
Reston, VA 22090
703/709-8043

Science Accessories
PO Box 825
Shelton, CT 06484
203/925-1661

Spectronics International
34 East Main St. #3
Champaign, IL 61820
217/352-0061

Team 17 Software
Prospect House
Borough Rd.
Wakefield
West Yorkshire WF1 3AB
England
92-429-1867

Thailon Publishing
3800 Monroe Ave.
Pitsford, NY 14534
716/248-6656

Virgin UK
338A Ladbroke Grove
London W10 5AH
England
81-960-2255

Virtual Reality Laboratories
2341 Ganador Court
San Luis Obispo, CA 93401
805/545-8515 ■

***AW* Shucks!**
In "The Compression Game," (Jun. '94, p. 26) the opening illustration was created by artist Phil Thorn and not by Steve Thorn. We apologize for the error.

LIST OF ADVERTISERS

s index is provided as an additional service. The publisher does not assume liability for errors omissions. * This advertiser prefers to be contacted directly.

vertising Inquiries should be directed to Advertising Offices, *AmigaWorld*, 80 Elm Peterborough, NH 03458; telephone: 800-441-4403. **Subscription problems or dress changes:** Write to *AmigaWorld*, Subscription Dept., PO Box 595, Mt. Morris, 61034-7901. **Problems with advertisers:** Send a description of the problem and r current address to: *AmigaWorld*, 80 Elm St., Peterborough, NH 03458, ATTN.: rlene Sweeney, Customer Service Liaison.

NOTICE TO ADVERTISERS

advertising is subject to the approval of the Publisher and *AmigaWorld* reserves the right efuse advertising without notice.

he advertising herein that has been typeset and/or designed by *AmigaWorld* is the prop- of *AmigaWorld*, and not that of the advertiser. The advertiser has purchased the right eproduction in *AmigaWorld* only, and does not have the right to reproduce the ad in other publication without the expressed written consent of *AmigaWorld*.

dvertisers and/or their agencies assume the responsibility for the condition of the con- ts of the advertising printed herein and agree to indemnify the Publisher of *AmigaWorld* any claims and/or expenses incurred therefrom.

migaWorld advises advertisers that statements regarding shipping and handling charges, rranties and/or money-back guarantees should be included within all forms of advertising *AmigaWorld*.

he opinions expressed in the articles and advertising appearing herein are those of the hors and/or advertisers and are not necessarily those of *AmigaWorld*.

InfoMarket

TURTLE LIGHTNING PUBLIC DOMAIN USER - FRIENDLY COLLECTION

We Have: TLAS-FISH-TBAG-EUROPEAN-LICENSEWARE-COM-

Try These 6-Disk Sets For $10.00 Each Set
FONT-PAC: Hundreds of Fonts with Assigns and Viewer(Many Sizes)
CLIP-ART PAC #3: Borders-Designs-Signs-People-Transportation-More
CLIP -ART PAC #4: Religion-Home-People-Sports-Animals-Occasions
POWER-MOD SET: 50 Great Music MODS Plus ED Player (Awesome)
10 Disks of Great LicenseWare Textures → Only $29.00 By: V.M.
ALL FRED FISH DISK ONLY $1.40 ea. Our Fish Catalog Disk is $1
GET OUR 4 DISK SAMPLER FULL OF GAMES: $5.00

LOW-COST COMMERCIAL
KIND WORDS Wordprocessor **$19.00**
TEXT-CRAFT Wordprocessor **$9.00**
INTELLI-TYPE TYPING TUTOR **$19.00**
PageSetter $14.00
DELUXE PAINT 2 **$10.00**
VALUE-PAC #7: DELUXE PAINT 2, PAGESETTER, KINDWORDS ALL FOR **$33**
VALUE PAC #6: No Box Software, 1 Manual For All, INFOFILE Database, F40 PERSUIT, PORTS OF CALL, Who What Where, MASTER TYPE, All 5 FOR **$29**
DELUXE CLIPART (Electronic Arts)
ART PARTS Volume 2 **$7**
SEASONS& HOLIDAYS **$7**
COMMODORE MOUSE **$22**
AMIGA BOOK BEGINNERS **$6**
AMIGADOS Reference Manual **$4**
BIBLE SEARCH
MARATHON JOYSTICK **$11.00 EA** OR 2 For $16.00
DPAINT 3 **$39.00**

GREAT TLAS DISKS FOR ONLY $2.00 EA

BUS/TOOLS:
116-SPREADSHEETS
241-TEXTENGINE
261-C MANUAL
262 C MANUAL
263 3 DISK SET
286- LABEL PRINTERS
287-EASY BANKER
288-PENNYWISE
289-VIRUS KILLERS
396-BIZCALC
400-BANNER MAKER
449-BUDGET
455-B_BASE 3
472- MULTI_DOS/SID
473-COOKBOOK
671-KICK_1.3INSTL
716-SCREEN BLANKERS
720-JR_COMM
741-PK_ZIP CRUNCH'R
763-TERMINOUS MASTER
788-BEST DISK COPIERS
815- MAGIC WORKBENCH
819-STOCK ANALYST
821- DISKSALV2/REORG

EDUCATIONAL:
69-COLORS & SHAPES
95-JAPANESE TUTOR
200-STATES/MATH/
201-SPACE_LOG
338-WORK_SEARCH X/W
345-COMPUTER TUTOR
350-DESERT STORM
399-BIBLE PROSPER
399.S SPANISH VERS
412-WORLD DATA BANK
454-VERSEWISE (BIBLE)
495-MATH PLUS
669- BODY PARTS
688-SOLAR SYSTEM
672-DINOSAURS

GAMES GAMES
9-ADVENTURE MAKER
10-STAR TREK #2
11 BY E. GUSTAFSON
12 S.T.3-DISK SET
13 WANDERER (ARCADE)
14-STAR TREK #3
15 T. RICHTER 2-DISK
21-SEA LANCE (SUB)
22-YAHTZEE (3 GAMES)
24-MONOPOLY/W.O.FORT
44-DOWNHILL SKI'N
55-ZERG (D&D GAME)
62-DRIP (Arcade)
70-MISSLE COMMAND
72-DRAGON CAVE
78-PETERS QUEST (ARC.)
79-MEGA BALL
80-PAC MAN+
96 TANKS /INTERFERON
103-TETRIS GAMES
114 LEMMINGS PL-DEM#1
128-SPACE GAMES
136-HATE (ZAXXON Cln)
137-BLACKJACK/ BANDIT
143-NEBULA (3-D GAME)
147-INTREPID (Tank Sim)
148-BOULDERDASH/MICRO
162-VIDEO POKER
176 GALACTIC WORM
190-MORIA (D&D)
191-KINGDOM AT WAR
194-SINKING ISLAND 3
238-BOMBBUZAL
240-CHESS/PACCER
245-CHECKERS
255-PINBALL
282-SYS (ARCADE)
328-WANGLE/TRIX
349-OXYD
378-DOMINOS/CARDS+
398-LEG OF LOTHIAN
403-INTRUDER ALERT

GAMES
433- SCUD BUSTER+
468-LEMMING2 TRIBES PLAYABLE DEMO
470-SEUCK GAMES(3)
489-BLOOD BALL
492-WALKER (Playable)
673-DEFENDER
684-ULTIMATE RIDE- Dem
728-TRODDLERS 6-LEV
766-DESERT STRIKE Dem
772- POPEYE
796-MEGABALL 3
812-SCORTCHED TANKS
816 - INCINERATOR

EURO-GAMES:
*FAT-AGNUS REQUIRED
500-NO MANS LAND
514-SUPER PACMAN
517-LEAP'N LARRY
524-DONKEY KONG(1.3)
533-PINBALL FANT.Demo
535-FIRE'N ICE
538-TANX/Dragontiles
561-PARACHUTE JOUST
575-STARBASE 13
576 2 DISK SET
577-MOTOROLA INV
578 2 DISK *AGA*
599-LEMMINGS LEVELS
605-Point of Sale AGA
606- A1200 Fixes

CALL FOR A **FREE** TLAS CATALOG DISK

FAX: 915-563-4315
TLAS
PO BOX 30499
MIDLAND,TX 79712-0499

VISA COD 915-563-4925
Postage/Handling= $3.00 COD Orders $3.00

Circle 156 On Reader Service Card.

TRANSDATA SYSTEMS

"Your One Stop Amiga Store" ™
(Authorized Commodore Amiga Dealer)

CD 32 NEW	$395	Pagestream 3.0	$229
TBC Plus(GVP)	$770	Gigamem	$89
TBC IV	$835	A1000 Printer Cable	$24
Studio 16	$1160	Desktop Budget	$47
Kitchen Sync	$1280	C Net 3.0	$125
A40008 SCSI(GVP)	$159	Top FORM	$39
A500-HD8+0/120(A500)	.$425	Home Front	$39
G-FORCE-040/33/4(A2000)	$1100	Profill Vol 2/3	$29
G-FORCE-40/4(A4000)	$1581	Scenery Animator	$62
A1291 SCSI Kit(A1200)	$99	Vista Pro V3	$62
A1230/AD or 50/A(A1200)	$504/705	Home Bulider CAD	$57
DSS8+(Sound Digitizer)	$84	AS 314(A3000)	$32
Supra Turbo 28 (A500/A2000	$150	Brillance	$117
Supra 500 RX(1Meg/A500)	$169	Rexx Plus Compiler	$127
MBX 1200Z(25MhZ/A1200)	$232	Super DJC 8	$35
3.5 H.D. Ext. F/D	$159	Image FX	$212
ALFA RAM Ext. A500	$54	Word Writer 6 (C-64)	$29
Data Flyer RAM(A2000)	$99	Printer Int.(C-64)	$45
Data Flyer Int. (A2000	$79	1351 Mouse(C-64)	$29
Data Flyer XDS (A1200/ext call)	$72	1x4 SC ZIP(A3000)	$25
Data Flyer 4000 SX-2	$99	1x32 60/70 SIMM(4MB)	$161
THE PERSONAL SFC	$389	2x32 60/70 SIMM(8MB)	$335
PCMCIA 1MB (w. batt)	$170	4x32 60/70 SIMM (16MB)	$705
DKB 1202(A1200)	$149	8x3260/70 SIMM(32 MB)	CALL
DISTANT SUN 5.0	$57	Price & Availability to change without notice	

We will ship anywhere in the world. We carry a large selection of hardware and software for Commodore/Amiga
Please call for the new release
PO Box 1429, Sun Valley, CA 91352
Tel: 714-630-1831, FAX: 714-630-5619

Circle 180 On Reader Service Card.

THE LAST WORD

Kudos, complaints, comments, concerns, and contributions from our readers.

Editor's Note: Because "Last Word" was going to press before readers had a chance to respond to the events at Commodore by traditional post, we're including some online responses to a press release we posted about the events on the networks. For more information about the Commodore situation, and reactions to it, see pp. 2 and 4.

Long Live the Amiga!

Thanks for posting that notice. It's good to see that *AmigaWorld* will be with us, even after Commodore's demise.

Steve Pietrowicz
CompuServe: 76701,250

Good . . . hate to have my subscription change to some pc/mac mag!!

Thomas Harmon
CompuServe: 72740,2261

Concerning the licensing [of Amiga technology to third parties], I'd die happy if multiple, nonexclusive licenses to all the technology were granted to pursue the technology of Amiga computers and maybe the CD32, with, say a set-top box exclusion . . . If the licenses could be granted, the Amiga—or at least AmigaDOS—may well live on into the future as an important product.

Joanne Dow
jdow@bix.com

You should encourage companies to continue to develop for the Amiga and to continue to advertise in *AmigaWorld*. The temptation will be for anyone who continues to produce software and hardware for the Amiga to say, "Hey, I've got a captive market now. I don't need to advertise."But if there isn't a support forum for the machine like *AmigaWorld* then the market will die sooner!

Advertisers need to think of it not so much as "building a market," which is what advertising was to them in the past: They need to think of it as "donating blood" so that the Amiga market will survive longer.

Mark Brown
mbrown@icaen.viowa.edu

Pats on the Back

I have read your magazine for years, since the Amiga first came out and have thoroughly enjoyed every issue. I always wait anxiously every month for my next issue to arrive. I applaud your fine magazine. If it wasn't for your continued support for the Amiga and its community, it might have had a premature demise years ago.

Rob Watson
Gibsonville, North Carolina

> *It's good to see that **AmigaWorld** will be with us, even after Commodore's demise.*

Two thumbs up for Dave Haynie's article, "The Best Things in Life Are C," in the May '94 issue. I look forward to the continuation of this series and applaud its inclusion in your fine magazine.

Todd Wiggins
Bakersfield, California

EGS for Everyone

I enjoyed your review of the GVP EGS 28/24 Spectrum in the April '94 issue. Although you pointed out many of the board's positive features, you also repeated an ongoing misconception regarding the Spectrum and EGS.

One of the strongest arguments against EGS boards such as the Spectrum, in a comparison with boards like the Picasso II, regards the lack in ability to promote Workbench software to the board's high display rates. Fortunately for Spectrum users such as myself, this is not the case.

The Spectrum does not require that you use EGS specific software in order to utilize the graphic board's special resolutions. Once the Spectrum is installed, all of its resolutions are added to the Workbench display database. You can edit and create new resolution modes with the EGS software. Any software that allows you to choose resolutions from the display database can use EGS screen modes.

It doesn't stop there however, you can also use some of the PD promotion utilities to promote software to EGS screen modes. I can run Imagine 2.0 on a 1600x1280 screen! I'm not sure if promotion works as easily on all systems, but it works perfectly on my A4000 under 3.0.

Vadim Levitin
Lenexa, Kansas

DOS and Don'ts

In "Hidden AmigaDOS Gems," in the May issue, the section on CMD [has] the operand parallel in all caps. For some inexplicable reason, this one AmigaDOS routine is case-sensitive, and any form except "parallel" does not work in any machine I have tried it on, either 1.3 or 2.1.

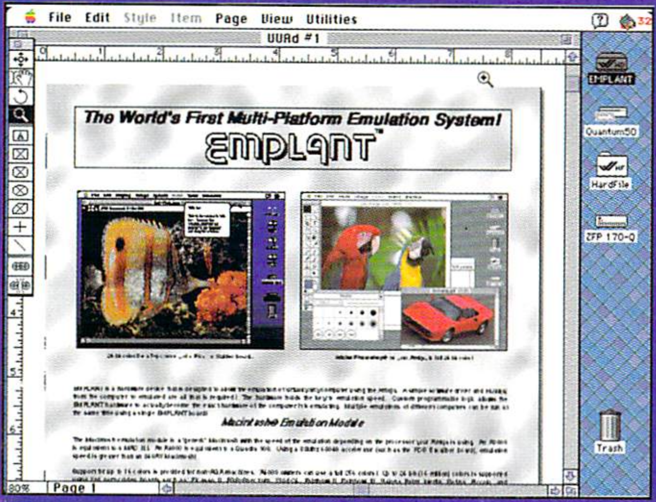
Another oddment about CMD: In my experience, use of this function runs a significant risk of a guru. This problem arises, I suspect, when some application program thinks it has first "dibs" on the parallel port or on the printer, and you try to butt in with a CMD redirection.

Geoffrey A. Gass
Portland, Oregon

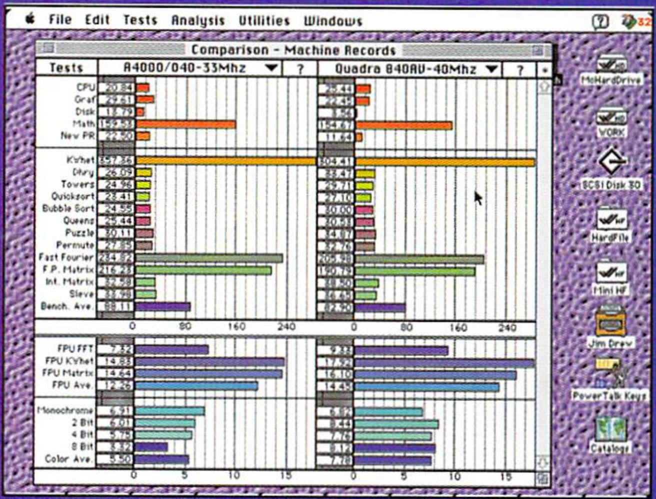
Editor's Note: Thanks for the correction, Geoffrey. We apologize for any inconvenience our error may have caused. ■

The World's First Multi-Platform Emulation System!

EMPLANT™



~May 1994 *AmigaWorld* ad for EMPLANT - Created using **QuarkXPress®** with an A3000 EMPLANT system!



"Speedometer v3.23" speed comparison (68040 CPUs) 33Mhz A4000 vs. 40Mhz 840AV - Hey! That's not fair!

EMPLANT is a hardware device that is designed to allow the emulation of virtually any computer using the Amiga. A simple software driver and ROM(s) from the computer to emulated are all that is required! The hardware holds the key to emulation speed. Custom programmable logic allows the EMPLANT hardware to actually become the exact hardware of the computer it is emulating. Multiple emulations of different computers can be ran at the same time using a single EMPLANT board!

Macintosh® Emulation Module

The Macintosh emulation module is a 'generic' Macintosh with the speed of the emulation depending on the processor your Amiga is using. An A3000 is equivalent to a MAC IIci. An A4000 is equivalent to a Quadra 900. Using a 33Mhz 68040 accelerator (such as the RCS Excaliber board), emulation speed can be greater than an 840AV Macintosh! (See speed comparison above)

Support for up to 16 colors is provided for non-AGA machines. A4000 owners can use a full 256 colors! Up to 24 bit (16 million+) colors is supported using 3rd party video boards such as: Picasso II, EGS-Spectrum, Vivid-24, Rainbow II, Rainbow III, Visiona Paint, Merlin, Retina, Retina Z3, Piccolo, EGS110/24, and OpalVision! ...and we'll support any future video boards that are suitable for use with the emulation!

Like ALL of the emulation modules that will be released for use with the EMPLANT hardware, the Macintosh emulation module **MULTITASKS** with the Amiga's operating system! You can simply pull down or flip screens and get back to the Amiga side! ...and the emulation stays running at full speed!

Future Emulation Modules

Since the EMPLANT's hardware is so versatile, a completely new and different computer can be emulated by just changing the emulation software patch and the ROM(s). IBM 486DX, Atari 400/800, and Apple IIe/c emulations are in beta testing now! Atari ST, and C64/128 emulations are planned for the future! You need no additional hardware for future emulation modules. All necessary hardware is already built into the EMPLANT board!

Four different versions of EMPLANT are available, ranging in price from $279.95 to $399.95. Order direct from Utilities Unlimited Intl., Inc. or from one of our dealers (more than 200 dealers across the US and overseas carry EMPLANT). US customers, please include $10 for shipping/handling (all orders are sent UPS 2 day delivery). Customers outside North America, please contact Blittersoft: +44 0908 666265 for the dealer nearest you.
Dealer inquires are welcome!

Utilities Unlimited International, Inc.
790 N. Lake Havasu Avenue #16
Lake Havasu City, AZ 86403 U.S.A.
(602) 680-9004 24hr order line
(602) 453-6407 24hr Fax line
(602) 680-9234 Technical support dept.
(602) 453-9767 24hr BBS (2400-14.4K)
(602) 453-3909 24hr BBS (14.4K-28.8K)

Another Amazing Product From the Makers of EMPLANT!

AMIA

(Amiga<>Macintosh Interface Adapter)

AMIA is a tiny interface adapter that plugs into the last external disk drive connected to your Amiga (or to the Amiga's drive port if no external drives are present), and allows an external Macintosh floppy drive to be used with your Amiga! This interface is ideal for use with EMPLANT's Macintosh emulation module! You can read and write true Macintosh low density (800K) formatted disks and convert them to and from various formats, including full disk images! The design of the AMIA hardware makes it the only Macintosh disk drive interface capable of multitasking with the Amiga's OS! When *MultiOSFileSystem* is released, you will be able to use AMIA to access low density Macintosh floppys right from WorkBench! Price: $59.95

We also have a limited supply of Fujitsu 800K Macintosh compatible external floppy drives for only $129.95!

Circle 159 on Reader Service card.

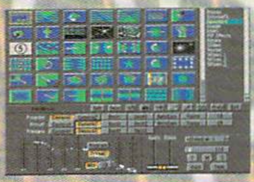
Macintosh, 840AV, MAC IIci, Quadra 900, & Apple IIe/c are registered trademarks of Apple Computer, Inc.; Atari ST & 400/800 are trademarks of Atari Computers, Inc.; QuarkXPress is a trademark of Quark, Inc.; "Speedometer v3.23" © 1993 by Scott Berfield; EMPLANT, the EMPLANT logo, and the acronym 'Electronic Micro-Processor Level Amiga Native Task' are trademarks of Jim Drew & Utilities Unlimited International, Inc.

OpalVision™ VideoProcessor

Seeing is Believing



OpalVision Roaster Chip


Hundreds of Effects



MONTAGE 24

Here now at these Authorized OpalVision Sales and Service Centers

USA

DON LESMEN MUSIC CENTER
ALBUQUERQUE, NM
505-268-2111

HT ELECTRONICS
SUNNYVALE, CA
408-737-0900

CREATIVE COMPUTERS
LAWNDALE, CA
310-542-2292

THE LIVELY COMPUTER
LA MESA, CA
619-589-9455

THE COMPUTER ROOM
AURORA / ENGLEWOOD, CO
303-696-8973

SLIPPED DISK
MADISON HEIGHTS, MI
810-546-3475

TRI-STATE COMPUTERS
NEW YORK, NY
800-220-2224

MICROWORKS
BUFFALO, NY
716-873-1856

SOFTWARE HUT
SHARON HILL, PA
800-848-0079

MICRO SEARCH
HOUSTON, TX
713-988-2818

SAFE HARBOR
WAUKESHA, WI
800-544-6599

OMNI INTERNATIONAL TRADING
SEATTLE, WA
206-628-2923

CLACKAMAS COMPUTERS
CLACKAMAS, OR
503-650-0379

International

PHANTA
BUENOS AIRES, ARGENTINA
54 1 7820737

SOLARIS
INNSBRUCK, AUSTRIA
512 49 49 24

JOLLY SOUND LIMITED
HONG KONG, CHINA
852-362-0202

ML SYSTEMS
WATERKLOOF, SOUTH AFRICA
12 346 1160

C. I. S.
PESSAC, FRANCE
57 89 11 40

VIDEO COMP
OVERURSEL, GERMANY
61 71 59 070

KB SRL
BOLOGNA, ITALY
51 76 55 63

CAPELLA
OSLO, NORWAY
222 00 806

CHROMA
COIMBRA, PORTUGAL
351 39 273 43

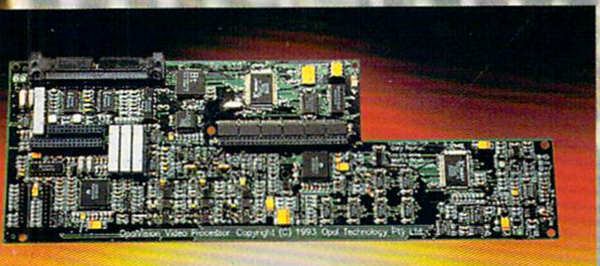
STEEPLER
MOSCOW, RUSSIA
095 246 1042

KARLBERG & KARLBERG
BJARRED, SWEDEN
46 47 450

Z. C. L.
LICHFIELD,STAFFS.,UK
54 34 14 817

WONDER COMPUTERS
OTTAWA / TORONTO, ONTARIO
613-596-2542

VFX
BURNABY,B.C. CANADA
800-661-4007



- High-quality, real-time 24-Bit framegrabber • Professional-quality genlock
- Chroma and luma keying • 256-level linear transparency key
- Video Sandwich key • Real-time color processing and chrominance effects
- Unlimited number of transitions and 3D Digital Video Effects • 24-Bit picture-in-picture
- 24-Bit, 1ns character generation with MONTAGE 24 software

OpalVision Video Processor

Inputs/Outputs:
- Composite in/out
- Y/C in/out (S-VHS, Hi-8)
- RGB output
- OpalVision Video Suite connector

Software:
- OpalVision System Software
- MONTAGE 24
- Opal F/X Edit

Manufactured and Distributed by:
Centaur Development
P.O. Box 3959
Torrance, CA 90510
Phone: (310) 787-4530
FAX: (310) 222-5882
BBS: (310) 787-4540

opaltech
Created by:
Opal Tech
Sydney, Australia

OpalVision, OpalPaint, OpalPresents, OpalVision Video Suite, OpalVision Video Processor and OpalVision Roaster Chip are trademarks of Opal Technology, Ltd. OpalAnimMATE and Opal F/X Edit are trademarks of Centaur Development, Inc. MONTAGE is a trademark of Innovision Technology.

Circle 162 on Reader Service card.